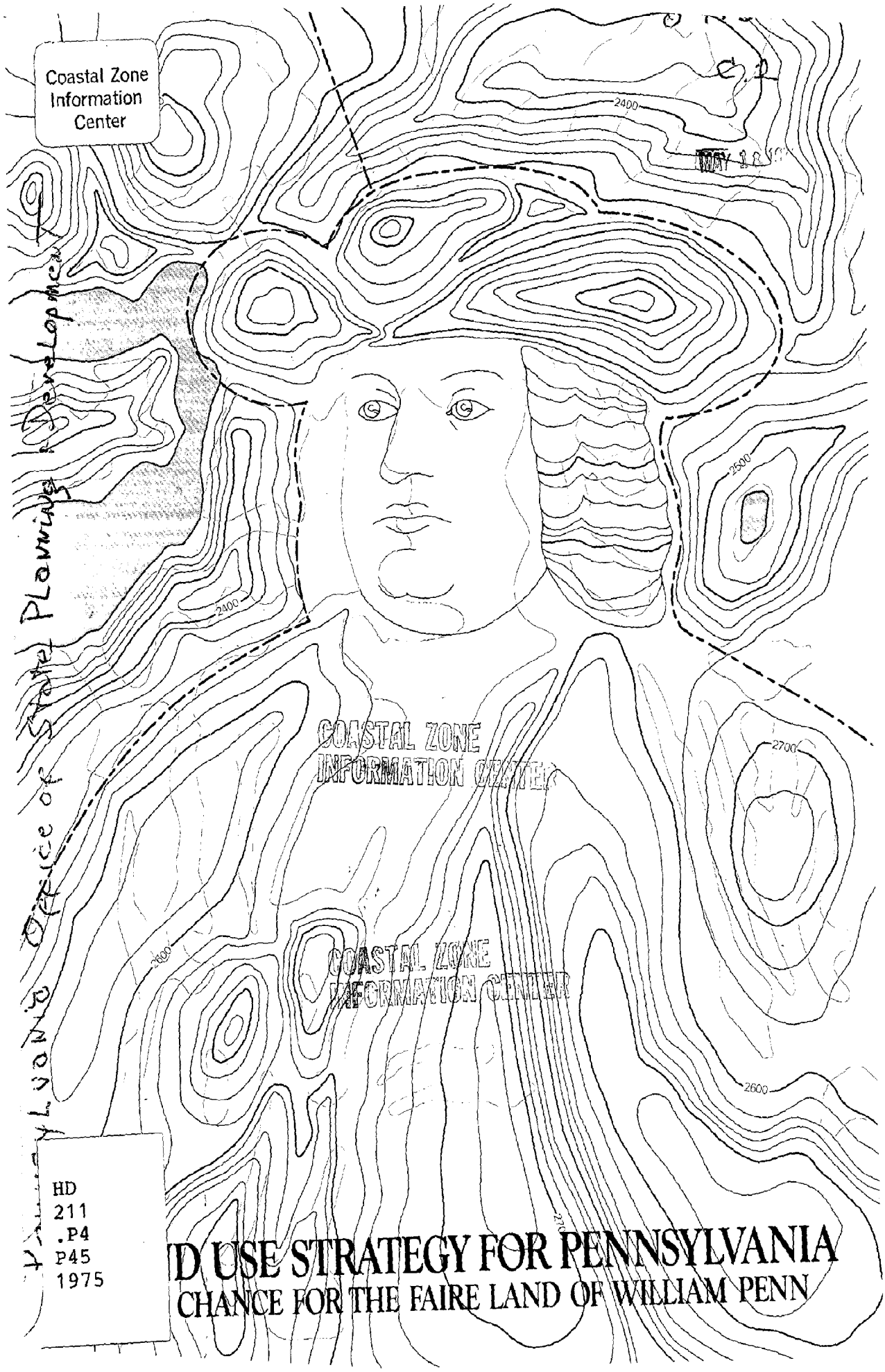


D USE STRATEGY FOR PENNSYLVANIA

CHANCE FOR THE FAIRE LAND OF WILLIAM PENN

". . . the Country is in Soyle good, aire sereen (as in Languedock) and sweet from the Cedar, Pine, and Sasefrax, with a wild mertile that all send forth a most fragrant smell, which every brees carrys with it to the Inhabitants where it goes."

— letter from William Penn to the Earl of Sunderland, 1683

Revised 1976 order form

Copies of the full report are available from:

The Pennsylvania Land Policy Project
316 Fourth Avenue
Pittsburgh, Pennsylvania 15222

	Price	Number of Copies Desired
A Land Use Strategy for Pennsylvania: A Fair Chance for the "Faire Land" of William Penn	$4.00	_____
Laws Which Regulate Land Use in Pennsylvania	2.00	_____
Potential Economic and Fiscal Impacts of a Land Use Policy for the Commonwealth of Pennsylvania	2.00	_____
State Land Use Programs: Issues and Options	2.00	_____

Please indicate above the number of copies of each report you wish to order and return this form with payment. Checks should be made payable to the Western Pennsylvania Conservancy.

Name _____

Address _____

City _____ State _____ Zip _____

A LAND USE STRATEGY FOR PENNSYLVANIA:

A fair chance for the "faire land" of William Penn

prepared by:

The Pennsylvania Land Policy Project
204 Fifth Avenue
Pittsburgh, Pennsylvania, 15222

for:

The Pennsylvania Office of State Planning and Development
Harrisburg, Pennsylvania

Preparation of this report was financed in part through a grant from the Bureau of Outdoor Recreation, Department of the Interior, under provisions of the Land and Water Conservation Fund Act of 1965 (Public Law 88-578; 78 Stat. 897).

THE PENNSYLVANIA LAND POLICY PROJECT

PROJECT STAFF

Arthur A. Davis, Director
Patricia A. Brisini
Raymond R. Christman
Babette Jenny
Thomas M. Schmidt, Project Coordinator
Jane Murphy, Secretary

LAND USE POLICY STUDY ADVISORY COMMITTEE

Chairman — Edward F. Mannio, Esq.
Dilworth, Paxson, Kalish,
Levy and Coleman,
Philadelphia, Pennsylvania

Thomas Dolan
Vice President
Betz Environmental Engineers, Inc.
Plymouth Meeting, Pennsylvania

Edward Foster
Professor
Graduate School of Public and
International Affairs
University of Pittsburgh
Pittsburgh, Pennsylvania

William R. B. Froehlich
Executive Director
Southwestern Pennsylvania
Regional Planning Commission
Pittsburgh, Pennsylvania

Irving Hand
Director
Institute of State and Regional Affairs
Capitol Campus, Penn State University
Middletown, Pennsylvania

Arthur F. Loeben
Executive Director
Montgomery County Planning
Commission
Norristown, Pennsylvania

Robert W. Pierson
Executive Director
Bucks County Conservancy
Doylestown, Pennsylvania

Robert Ryan
President
Ryan Development Associates, Inc.
Pittsburgh, Pennsylvania

Thomas M. Schmidt, Esq.
Western Pennsylvania Conservancy
Pittsburgh, Pennsylvania

an activity of the Western Pennsylvania Conservancy

Joshua C. Whetzel, President

PREFACE

In recent years an increasing number of states have enacted land use programs. Several factors account for this quickened state interest in land use planning and regulation:

- heightened public concern over environmental protection;
- an emerging awareness of scarcity, and the need for managing limited resources more efficiently;
- the energy crisis; and
- the prospect of national land use legislation.

In Pennsylvania, Governor Shapp called for the development of a State land use program in September, 1973. The Office of State Planning and Development (OSPD) was designated to take the lead in an interdepartmental effort to design such a program. Earlier that year, the Environmental Planning and Information Center of Pennsylvania (EPIC), under the leadership of its president, Thomas Dolan, had proposed preparation of a report and recommendations for an environmentally-sensitive land use policy for the Commonwealth. EPIC was forced to disband before final action could be taken on the proposal, but the Western Pennsylvania Conservancy agreed to assume responsibility for the project, and carried the work forward.

The Office of State Planning and Development approved the EPIC proposal, and applied for and received a Federal grant from the Bureau of Outdoor Recreation, Department of the Interior, to help finance the work. OSPD also agreed to provide certain staff services, including the preparation of graphics. Additional funds necessary to carry out the project were contributed by the Rockefeller Foundation, New York, N.Y.; the William Penn Foundation, Philadelphia, Pennsylvania; and the Richard King Mellon Foundation, the Allegheny Foundation, and the Laurel Foundation, all of Pittsburgh, Pennsylvania. The support of these institutions is gratefully acknowledged.

From the outset, the project attracted a great deal of attention. A stream of ideas, information, and points of view has flowed in from every part of the State, and other states as well. There seems to be greater awareness now than even a few short years ago of how fundamentally the uses of land touch our lives. The questions these impacts raise — such as the proper balance between private and public rights, choices between economic and environmental priorities, the kind of governmental controls needed — are matters of keen concern and strong conviction in the Commonwealth. If these are the questions that will dominate domestic policy debate for the last quarter of this century, as has been suggested, Pennsylvania will not lack for opinions as to how they should be answered.

Beyond such public expressions, which have been useful and stimulating, the project has been fortunate in the generous help it has received from many individuals and organizations.

The Land Use Policy Study Advisory Committee, established to help shape the original proposal, has continued to provide information, advice, and encouragement. We are grateful for the contributions of its members. We are indebted, also, to George Kasparek, Associate Director of the Office of State Planning and Development, whose cooperation throughout the study was never dependent upon a congruence of opinion, and to Raj Chadha, who served as staff liaison between OSPD and the project.

Staff of many State agencies answered questions, provided data, and reviewed draft materials. In particular, we wish to thank William Eichbaum, Caren Glotfelty, Rick Carlson, and James Nelson of the Department of Environmental Resources; Roy Newsome and Michael Young, of the Department of Community Affairs; Thomas Rowland and Al Papa of the Department of Agriculture; and Willard Johns, of the Pennsylvania Fish Commission.

Samuel Hays provided data on Pennsylvania's wild areas. Helpful suggestions on the text were made by Howard Grossman, Executive Director of the Economic Council of Northeastern Pennsylvania; Tim Palmer, Lycoming County Planning Commission; and Eleanor Winsor, Executive Director, Pennsylvania Environmental Council.

The public attitude survey would not have been possible without the help of the leaders and membership of the 26 organizations that participated. We are indebted, also, to the 48 land use experts who submitted to lengthy in-depth interviews. Their advice on key issues added a valuable dimension to the study.

The project could not have come about without the sponsorship of the Western Pennsylvania Conservancy, and the unswerving support of its president, Joshua C. Whetzel. Conservancy staff participated in many ways: Thomas M. Schmidt served as project coordinator; Paul Wiegman supplied much material on natural areas; John C. Oliver advised on State park and forest policies; and Bill Randour helped with publications and public affairs.

As with any policy study, there are bound to be dissents from some of the study recommendations and conclusions. Errors of fact, or misinterpretation of what we thought we heard, may also be discovered, we hope infrequently. The project director accepts full responsibility with respect to both these matters.

Arthur A. Davis, Director
Pennsylvania Land Policy Project
Pittsburgh, Pennsylvania

TABLE OF CONTENTS

OVERVIEW

The contrasts, complexity, and diversity that characterize Pennsylvania pose special challenges to the development of a Commonwealth land use policy:

- Rich agricultural areas are being chewed away by encroaching development. Elsewhere, regions in need of economic underpinning fight stagnation.
- Despite 16 major floods in the last 40 years, and expenditures totalling over 4 billion dollars, hundreds of Pennsylvania communities still face the threat of flood waters each year.
- Mountains and the high northcentral plateau offer superb forests and parks, unspoiled landscapes, and abundant hunting and fishing opportunities. Yet these regions also must supply coal, oil and gas, and raw materials for the second ranking industrial state in the Nation. The national energy crisis will increase these pressures.
- Although fourth ranking in population among the states, the Commonwealth still has vast areas that are wild and unspoiled; with two of the Nation's top 25 cities, it is nevertheless a state of small towns. Local government dominates.

Thus far, only the smaller, rural, or recreation-oriented states have enacted comprehensive land use programs; no major industrial state has yet attempted the task. Moreover, other state efforts usually have been galvanized by an overriding issue that triggered action state-wide. But Pennsylvania, the "Keystone State," reflects the attitudes and circumstances of the three regions it joins – eastern seaboard, Appalachia, and middle west. While a number of issues arouse interest throughout the Commonwealth, no single concern dominates.

A Land Use Strategy for Pennsylvania

This report proposes an action program that takes these special requirements of the Commonwealth into account. It recommends a unified strategy for dealing with the State's principal landforms and land uses; and puts forward policies, programs, and intergovernmental arrangements for managing these lands consistent with the political traditions of the State.

The principal land use concerns of the Commonwealth are divided into three distinct categories, broadly related and interdependent, but requiring very different treatment:

- *management of farmlands, floodplains, and mountains.* These are

lands of many values, suitable for many purposes. Management should be directed toward uses that meet economic needs without destroying environmental values.

- *protection of critical environmental areas.* Management of these rare, fragile lands should be devoted to preserving their special environmental or cultural qualities.
- *guiding the direction and velocity of growth.* The management challenge is to channel growth where it will be most useful and efficient, and away from environmentally sensitive areas.

Policies and programs are recommended for managing these landforms. The report also proposes that:

- counties serve as basic building blocks for local governmental planning and regulation;
- the Commonwealth's commitment to regional planning be strengthened;
- Pennsylvania reassert its authority to regulate land uses of more than local impact; and
- a Pennsylvania Land Use Commission with an initial tenure of three years be established by the Governor, to organize and give leadership to the State land use program.

Final sections of the report suggest an approach for meeting the land use inventory and information needs of a State land use program, and present results of surveys carried out to learn how Pennsylvanians feel about the uses and regulation of their "faire land."

Part I

A Situation Report

"A general Description of the said Province, its Soil, Air, Water, Seasons, and Produce, both natural and artificial, and the good increase, thereof..."

— letter from William Penn to the Committee of the Free Society of Traders, London, 1683

PART ONE -- A SITUATION REPORT

I. THE PAST AS PROLOGUE

History and tradition influence present circumstance and future direction. As the Nation prepares to celebrate its 200th birthday, it is fitting that a land use study of the Bicentennial State begin with a remembrance of William Penn's purposes when he established "Penn's Woods," or Pennsylvania.

From the start, Penn related the physical and natural environment of the colony to its social and economic well-being. He named Philadelphia, his first settlement, "the city of brotherly love", and made it a refuge for the persecuted. At the outset he warned that Pennsylvania's resources were not endless: among his conditions for governing the Province, published in 1681, was a requirement "that in clearing the ground, care be taken to leave one acre of trees for every five acres cleared, especially to preserve oak and mulberries for silk and shipping."[1]

Penn's insistence on religious tolerance, and his pamphlets describing the rich lands of the colony attracted a continuous stream of immigrants: English and Welsh, who settled in the southeastern corner; Germans, who moved into the Lancaster plain; and Scots-Irish, who settled the frontier in 1728. With the influx of people, the river systems came into heavy use for transportation. More land was cleared.

As the wilderness receded, steps were taken to protect Pennsylvania's natural resources: in 1682 the General Assembly passed an act establishing responsibility for damage to woods by fire, and in 1721, another that protected deer from January 1 to July 1 (a fine of 20 shillings was imposed for its violation).[2]

Industrial growth of the State and extensive tapping of her mineral resources began early in the 19th century. (Earlier, Pennsylvania mines supplied much of the iron ore needed for armaments in the Revolutionary War.) By 1860, Pennsylvania was the country's leading producer of timber. Within a decade, "the State was in serious trouble. Hillsides, stripped of their trees, eroded; tons of rich topsoil were washed

[1] Department of Environmental Resources, *Conservation of the Natural Resources of Pennsylvania* (Harrisburg, Pennsylvania, 1972), p. 2.

[2] *Ibid.*, p. 2.

into our rivers and down to the sea."[3] Floods were rampant. Some species of wildlife were driven to extinction. Streams were polluted by communities and by industry. Efforts to deal with these problems were interrupted by the Civil War.

Afterward, the iron and steel industry expanded, and the State became a major industrial center. A wave of new immigration resulted — Poles, Italians, Czechs, Hungarians, and Russians — to man the mills and work the mines. A labor movement developed. Both the American Federation of Labor (AFL) and the Congress of Industrial Organizations (CIO) were founded in Pennsylvania.

During this period, also, the conservation movement gained momentum:

- the Fish Commission was created in 1866;
- both the Bureau of Forestry and the Board of Game Commissions were established in 1895;
- by the early 1900's the Commonwealth had a "Game Refuge Law", a "Purity of Water Act", and state parks, forests, and game lands;
- a water resources inventory was completed in 1913, and a Water and Power Resources Board appointed ten years later.

Many other conservation measures have followed, such as soil conservation and the first clean streams law in 1937. More recent measures include:

- a major bond issue to finance acquisition and development of lands for conservation, recreation, and historic preservation;
- appropriations to construct sewage treatment facilities and restore abandoned mine sites;
- creation of the Pennsylvania Department of Environmental Resources;
- preferential assessment of farmlands and open space.

Today, the Commonwealth faces stubborn environmental and land use problems — problems that are all the more difficult because they are closely intertwined with economic and social concerns. Will the Bicentennial State deal with them in ways that respect the legacy of William Penn?

[3] *Ibid.*, p. 3.

II. THE LAND OF WILLIAM PENN TODAY

In order to design a land use policy that meets the needs of Pennsylvania, it is necessary to know something of the people, resources, and economy such a program is to serve.

It has been remarked that of all the states, Pennsylvania comes closest to having every resource needed for self-sufficiency: coal and oil, timber and stone, water, farmland, and fresh and saltwater ports. Such diversity of resources is matched by a diversity of people, economy, landforms, and life styles.

As the "keystone" that links the eastern seaboard with the midwest, the Commonwealth shares the attitudes, issues, and circumstances of both. It has an abundance of small towns, and two of the nation's major metropolitan regions. Its landforms vary from coastal to mountains. In terms of land use, the State ranges from stagnating, depopulating, depressed regions to areas of headlong growth, where a rich agricultural base is crumbling under pressures of urbanization and development.

Pennsylvania's People

Pennsylvania only recently yielded to Texas the position of third most populous state. As of July 1974, the Commonwealth population was estimated at 11.8 million, a net decline of 27,000 since 1973.

The decrease continued a longstanding trend — at the close of World War II, Pennsylvania ranked second to New York in population. But in gross terms the decline is unimportant: Pennsylvania still has nearly 6% of the national population, though it ranks 33rd among the states in area. The Commonwealth's density of 262 people per square mile (as against a national average of 56), and its position as the second-ranking industrial state — after New York — assure that pressures against its resource base will not diminish.

In terms of land use policy, the characteristics of Pennsylvania's people are as important as their number. For example:

- 72% live in urban areas;
- 90% live in 50 of the 67 counties;
- 1/3 live in the Philadelphia region on less than 5% of the land;
- 1/4 live in the Pittsburgh region on 15% of the land;

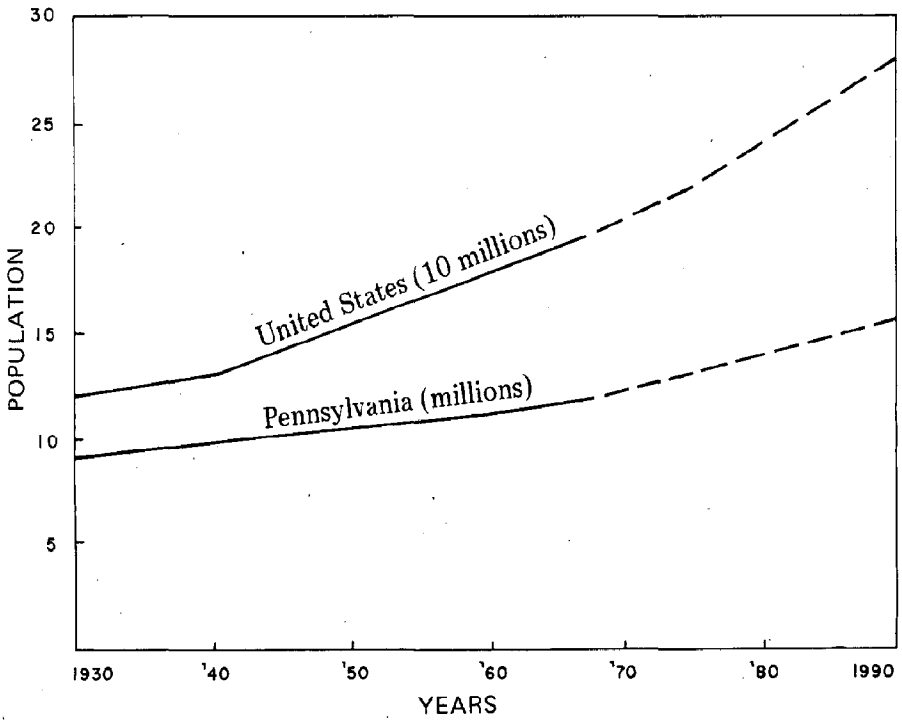
- Population is older than the national average;[4]
- Education level is below the national average;
- Per capita income is close to the national average, but lower than surrounding states except West Virginia.[5]

These figures have important implications. For example, they suggest higher-than-average service needs for the elderly, and future growth problems in eastern Pennsylvania, due partly to migration from rural regions.

[4]Office of State Planning and Development, *The Population of Pennsylvania, A Profile for 1970* (Harrisburg, Pennsylvania, 1973), p. 11.

[5]Governor Shapp, *Pennsylvania 1973-1974 Executive Budget* (Harrisburg, Pennsylvania: Department of Property and Supplies), Vol. 2, p. 293.

POPULATION TRENDS, PENNSYLVANIA AND THE UNITED STATES



The Dimension of the Commonwealth

The Commonwealth is 310 miles by 180 miles, a total of 45,333 square miles, and has six distinct physiographic regions:

- the lowland province along Lake Erie;
- the Blue Ridge Mountains in the south;
- the Piedmont or New England upland in the east;
- the central ridge and valley;
- the northcentral mountain plateau; and
- the Atlantic coastal plain in the southeast.

But to many, Pennsylvania is best known for its rich agricultural lands, its flowing waters, and its mountains:

Some of the richest farmland in the world is found in the Lancaster plain, the bottomlands of the ridge and valley province, and along the Lake Erie drainage.

The Commonwealth has more rivers and streams than any other state. The three major river systems — the Delaware, the Susquehanna, and the Ohio — and more than 4,400 miles of tributaries add up to over 45,000 miles of flowing water.

Mountains dominate the landscape over most of the State. By western standards they are neither steep nor tall — Mt. Davis, the highest point in the State, is only 3,212 feet above sea level. And much of the area of higher elevation is more accurately described as a deeply-dissected plateau, rather than as mountains. Nevertheless, the mountains of Pennsylvania give the State much of its character, and have made an indelible imprint on its people and economy.

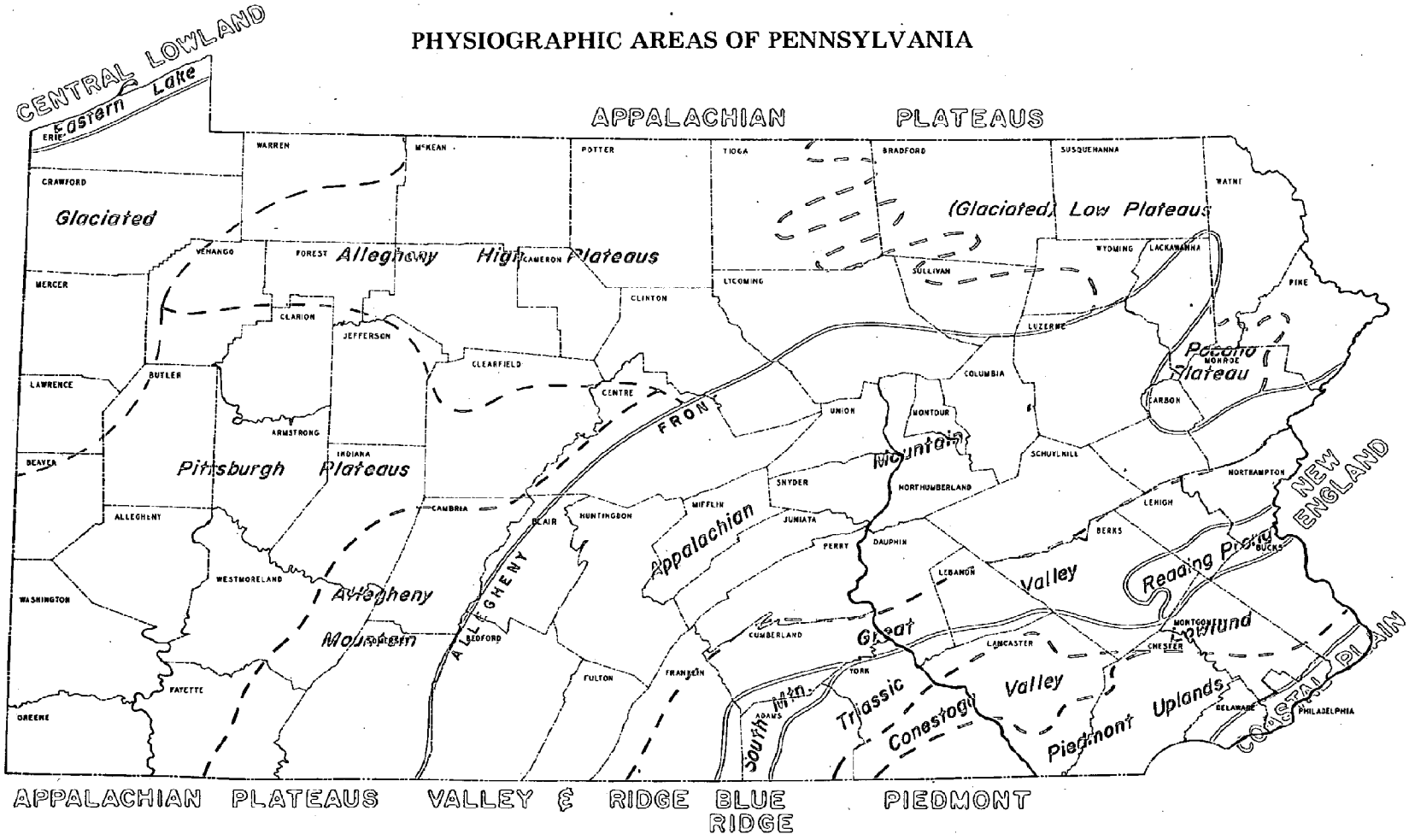
There are many other resources: abundant supplies of oil and gas, iron ore, limestone, clay, stone, and sharp sand; a diversified stock of timber, fish and wildlife; and coal seams that are among the most valuable mineral deposits in the world.

Transportation in the Commonwealth

Transportation systems conform closely to geography:

- the four major highway corridors avoid the mountainous center of the State;

PHYSIOGRAPHIC AREAS OF PENNSYLVANIA



PROVINCE

SECTION

DATA SOURCE: Pennsylvania Topographic and Geologic Survey

- the three largest cities are ports for the three major water transportation systems: Philadelphia, at the mouth of the Delaware; Pittsburgh, at the confluence of the Monongahela and Allegheny where they form the Ohio; and Erie, on Lake Erie;
- rail service has suffered competitive disadvantages due to increased costs of hauling around the mountains;
- air service has benefitted from the rough terrain: there were 577 airports in the State in 1972, and 60 counties had at least one commercial airport.

The State's Economy

The Commonwealth is consistently the second leading state in manufacturing, producing goods valued at over $20 billion per year:

- iron and steel production and metal products employ over half the industrial labor force; apparel, food, and related products are next,
- transportation equipment, textiles, printing and publishing, chemicals, paper, stone, glass, clay, rubber, and plastics also are important;
- Pennsylvania is the only economic source of anthracite coal in the Nation, and a major source of high quality bituminous coal; it produces the highest quality motor oil in the world, and has important natural gas deposits;
- the State is the Nation's leading producer of stone products: portland cement, lime and slate; and a primary source of sand, gravel, and clay for glass and pottery.[6]

Cash receipts from farming are among the top 20 in the nation, and the economy of the State is substantially dependent upon agriculture:

- 8% of the State's manufacturing work force is employed by the $4 billion food processing industry;
- over 2.1 million Pennsylvanians are employed in agriculture or related business;
- 77,000 farms raise over a billion dollars worth of produce annually: milk, eggs, cattle, apples, grapes, mushrooms, maple syrup, roses, tobacco, and other crops.[7]

[6] Department of Environmental Resources, *op. cit.*, p. 1.

[7] Governor's Committee for the Preservation of Agricultural Land, *Final Report with Recommendations to Governor Raymond P. Shafer* (Harrisburg, Pennsylvania, 1969), p. 5.

Twice as much land is in forest and farm — over 16 million acres, nearly 60% of the area of the State. These lands protect watersheds, provide outdoor recreation, shelter fish and game — and produce over $1.5 billion in forest products annually, and employ about 80,000 people.

The current energy crisis has focused major attention on Pennsylvania's coal, but the Commonwealth's oil and gas resources are also significant:

- the Commonwealth stores more natural gas than any other state;
- new recovery techniques and increased exploration doubled production activities in 1973;
- over a quarter million acres of State parks and forests are under lease for oil and gas exploration, production, or storage. Lands of the Game Commission are similarly involved, and much of the Allegheny National Forest is checker-boarded with oil and gas developments.

III. THE CASE FOR A LAND USE PROGRAM

Why a state land use program for Pennsylvania? How will it help to deal with problems facing the Commonwealth? Several concerns can be identified:

- Pennsylvania has not shared equally in the Nation's growth since World War II. New industries and activities — space, defense, electronics, data and communications — usually have gone elsewhere. Heavy industry and manufacturing continue to dominate the State's economy, often using outdated facilities and processes.
- There is imbalance of both land use and economy. Central and western areas have lost population, while eastern and southeastern regions have suffered leapfrogging sprawl.
- The State has not yet recovered fully from the consequences of tropical storm Agnes. Until an effective state-wide flood control and floodplain management effort is undertaken, the threat of floodwaters will cloud the future of over 2,000 Commonwealth communities.

A coherent, coordinated State land use strategy would help to better address these problems. It would also provide a means for attacking related concerns, such as:

- *in urbanized areas,* the continued strain on water and sewer services, and need for additional law enforcement, recreation, education, and transportation facilities;
- *in rural communities,* the difficulty of attracting human and economic capital necessary to reverse their downward spiral;
- *in central cities,* the deterioration that has hastened the flight of those who could leave, and channelled growth outward into the urban fringe or the rural countryside. Shopping center-oriented suburbs and spot rural development are the most visible results. Social damage, high energy requirements, and costly public services are less visible consequences;
- *in the countryside,* encroachment on productive farmlands has narrowed the agricultural base of the State, and diminished landscape values and environmental quality.

The list could be much longer — pollution, poorly planned second-home developments, and acid mine drainage, for example.

Pennsylvania, more than most states, has recognized these problems. But solving them has been a slow and uncertain process: without a guiding strategy there has been no perspective from which to examine the total set of issues, determine needs, establish priorities, and allocate funds and manpower accordingly. Public officials have had to react more or less intuitively, exercising their best judgment in dealing with situations as they arise.

A state land use program offers a more effective way:

- It arms public officials with a clear sense of the dimensions and interdependencies of the problems they face.
- It provides the electorate with a better understanding of where their tax dollars are going, and why additional actions are necessary.
- It supplies the basic requirements for sound management — ability to monitor progress, evaluate results, and control output and performance.

And Pennsylvania Tomorrow?

By any measure — topography, resources, people, or economy — Pennsylvania is indeed diverse; a state of more than ordinary complexity, full

of anomalies and contrasts, blessed with abundant opportunities but suffering difficult handicaps.

No state of comparable complexity and diversity has yet enacted a land use program. Yet arguments in favor of coordinated land use are powerful, and pressures for action growing. Inevitably, the major industrial states will move in this direction. Shall Pennsylvania lead the way?

IV. THE SPECIAL NEEDS OF PENNSYLVANIA

What kind of land use policy program will best suit Pennsylvania's needs?

Most states, including the Commonwealth, have enacted legislation dealing with one or another land use concern: coastal development, open space acquisition, protection of farmlands, and so forth. But only a few have adopted comprehensive land use programs. For the most part, these have been small, rural, or recreation-oriented states, with land use problems substantially different from those of Pennsylvania.

Moreover, their actions usually were triggered by an over-riding issue that united their citizenry in support of a legislative remedy:

- Vermont was concerned about second-home development, and the despoliation of its mountains.
- In Florida, a land use program was devised to deal with water shortages that threatened south Florida cities and the Everglades.
- Colorado and Oregon acted to control unplanned growth they feared would degrade their environments.
- Maine and Delaware saw need to protect their coastlines.

In Pennsylvania, a variety of concerns are expressed, varying by region, interest group, and other factors (see Part Five-V). No single issue will galvanize all its citizens. Moreover, the means for dealing with land use issues in a major industrial state with nearly 12 million citizens will need to be quite different from, for example, Vermont, which is without a single metropolitan area. Thus, if Pennsylvania is to have a land use program, it must fashion one to meet its own requirements.

Components of a Land Use Program

The Commonwealth's principal land use concerns can be divided into three distinct categories, broadly related and interdependent, but requiring very different treatments:

- *Managing farmland, floodplain, and mountain.* These are lands of many values, suitable for many purposes. Management should be directed toward uses that accommodate both economic and environmental values.
- *Protecting critical environmental areas.* Lands so rare, fragile, and valuable for environmental or cultural purposes that management should be directed solely to preserving their special qualities.
- *Guiding the direction and velocity of growth.* Channelling growth where it will be most useful and efficient, and away from environmentally sensitive areas.

The following sections of this report will consider each of these categories in turn, and propose policies and programs for dealing with them. A final part will present an organizational structure and administrative processes for placing recommended policies into operation; suggest how data needs can be met; and examine the attitudes of Pennsylvanians toward the lands and waters of their State.

Part II

Farmlands, Floodplains and Mountains: Resources Under Pressure

"Note, that Edward Jones . . . living on the Schuylkill, had with ordinary cultivation, for one grain of English barley, seventy stalks and ears of barley; and it is common in this country, from one bushel sown, to reap forty, often fifty, and sometimes sixty: and three pecks of wheat sows an acre here."

— letter from William Penn to the Committee of the Free Society of Traders, London, 1683

PART TWO — FARMLANDS, FLOODPLAINS, AND MOUNTAINS: RESOURCES UNDER PRESSURE

Overview

Four out of five acres in Pennsylvania are farmland, floodplain, or mountain. Their value for many purposes has led to strong pressures against them: pressures that have lead to misuse, or overuse, and are beginning to have serious consequences.

These are such important and extensive landforms that each is treated as an individual sub-program of the total State land use effort. In considering them, it has become clear that answers for important questions are simply not available. Lack of data is partly responsible — the extent, economic importance, and hydrologic function of mountain lands is not accurately known, for example. Other information is not knowable. How much cropland does Pennsylvania need? What national housing policies will be adopted? How often and damagingly will floods strike?

Where such uncertainties cannot be avoided, the guidelines proposed should be tempered by the following general principles:

- keep as many options as possible open and viable;
- consider all likely consequences of alternative land use policies before making decisions;
- involve those who will be affected by land use decisions on a full and continuing basis; and
- exercise the influence and authority of the State in support of long-term, generalized public benefits.

I. PRESERVING PRODUCTIVE FARMLAND

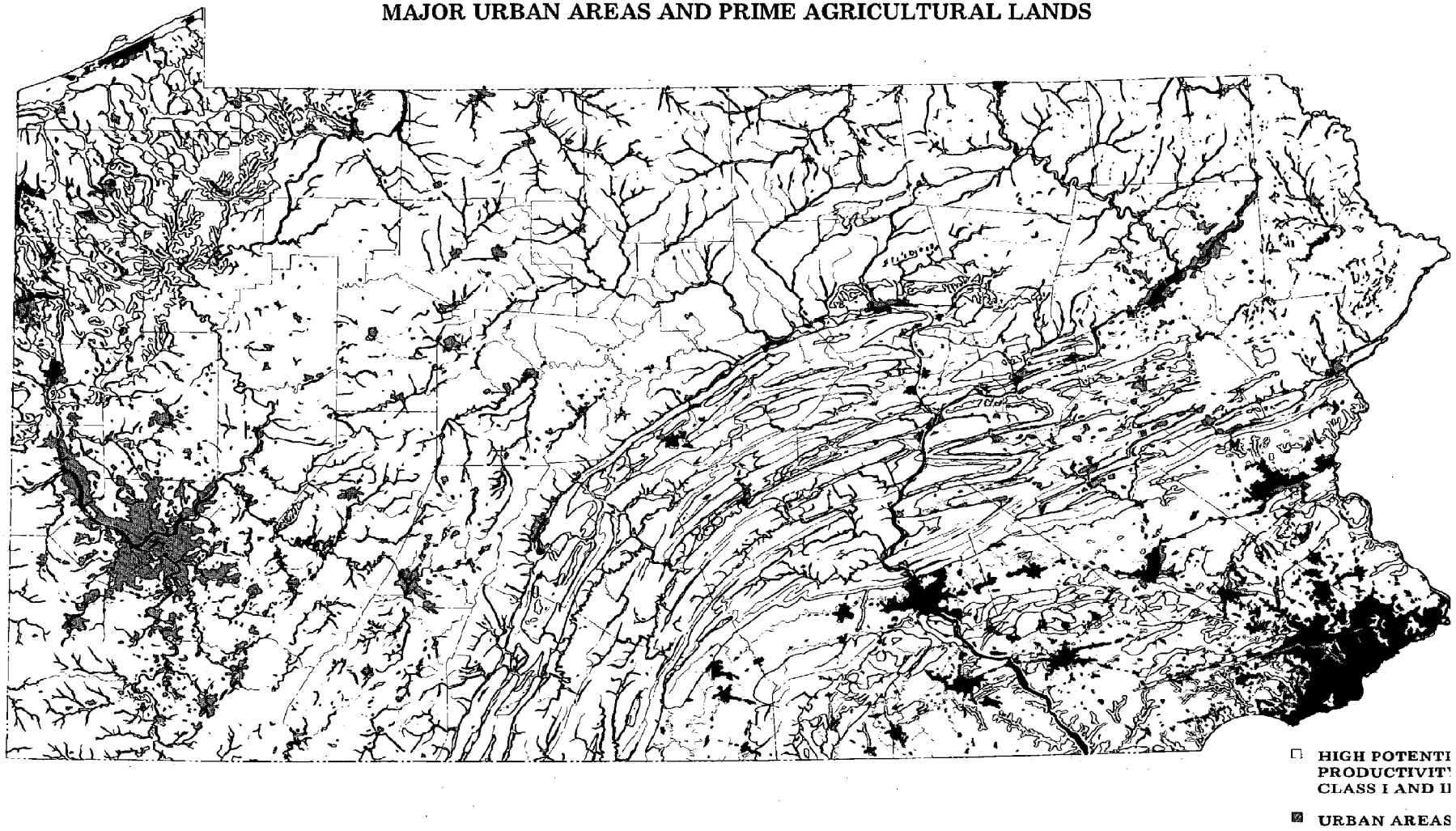
Forty-five states, including Pennsylvania, have taken action to conserve productive agricultural lands. It is a measure of the difficulty of this problem that none of these efforts has been very successful.

In Pennsylvania, high human and economic values are at stake:

- half of the State's farmland has been lost to food production since the turn of the century: 115 acres a day in the decade 1959-69 alone;[8]

[8]Governor's Committee for the Preservation of Agricultural Land, *op. cit.*, p. 1.

MAJOR URBAN AREAS AND PRIME AGRICULTURAL LANDS



- even so, one out of four acres was still devoted to farming in 1968;
- but less than half of the land now being farmed is classified as either Class I or II (see table A); most of this is near major urban regions, and vulnerable to development pressure;
- the best farmland is going out of production most rapidly: in Bucks County, the rate is 2% a year, while population density there increased by 35% in a recent 10-year period;[9]
- all classes of farmland are declining: between 1964-69 the total decrease was nearly 2 million acres, a loss of 18% for the period.[10]

Increasingly, the preservation of agricultural land has become a moral and ethical issue; with the prospect of up to 50 million of the world's people starving next year, it seems inherently wrong to convert rich farmland to suburban developments, interstate roads, warehouses, and shopping centers. True, agricultural production in Pennsylvania may not markedly alter the world food situation. But shortages of fuel and fertilizer, and increased shipping and distribution costs make continued production a useful hedge against crop failures elsewhere, and help combat rising food prices locally.

The economics of farming are important in Pennsylvania: nearly $10 billion in wages are paid to over 2 million Pennsylvanians annually.[11] There are a score of less tangible benefits associated with farmlands, including their value for:

- groundwater recharge areas;
- providing buffer areas between communities, giving them the sense of identity and place essential to urban well-being;
- supporting fish and game stocks;
- open space and outdoor recreation.

Beyond these, farmland and farming make possible the kind of landscapes and countryside that cannot be valued in dollars, but will make all Pennsylvanians the poorer when they are gone.

[9] Al Papa, "Bucks County Agricultural Study" (Harrisburg: Pa. Dept. of Agriculture, 1974), pp. 3-4.

[10] *1969 Census of Agriculture — County Data, Pennsylvania* — 1.

[11] Governor's Committee for the Preservation of Agricultural Land, *op. cit.*, p. 5.

TABLE A:
SOIL CLASSES

Agricultural Commodity — Any and all plant and animal products produced in this State for commercial purposes.

Agricultural Land — Land used for the purpose of producing an agricultural commodity including farmsteads, farm lanes and associated land, and land diverted from agricultural commodity production by an active Federal farm program, provided the diverted land has a conservation cover of grasses, legumes, trees, or wildlife shrubs.

Agricultural Land Capability Classifications — A system developed by the Soil Conservation Service of the United States Department of Agriculture to classify land for agricultural use into eight land classes ranging from Class I through VIII. The classification of a particular piece of land depends on its slope, depth, internal drainage, texture of the surface soil, stoniness, organic matter content, flooding hazard and erosion hazard.

Class I . . . . . .Soils which have few limitations that restrict their use.

Class II . . . . . .Soils which have some limitations that reduce the choice of plants or require moderate conservation practices.

Class III . . . . . .Soils which have severe limitations that may reduce the choice of plants or require special conservation practices or both.

Class IV . . . . . .Soils which have very severe limitations, that restrict the choice of plants, require very careful management, or both.

Class V . . . . . .Soils which have severe limitations that are impractical to remove. Use is limited largely to pasture, woodland or wildlife.

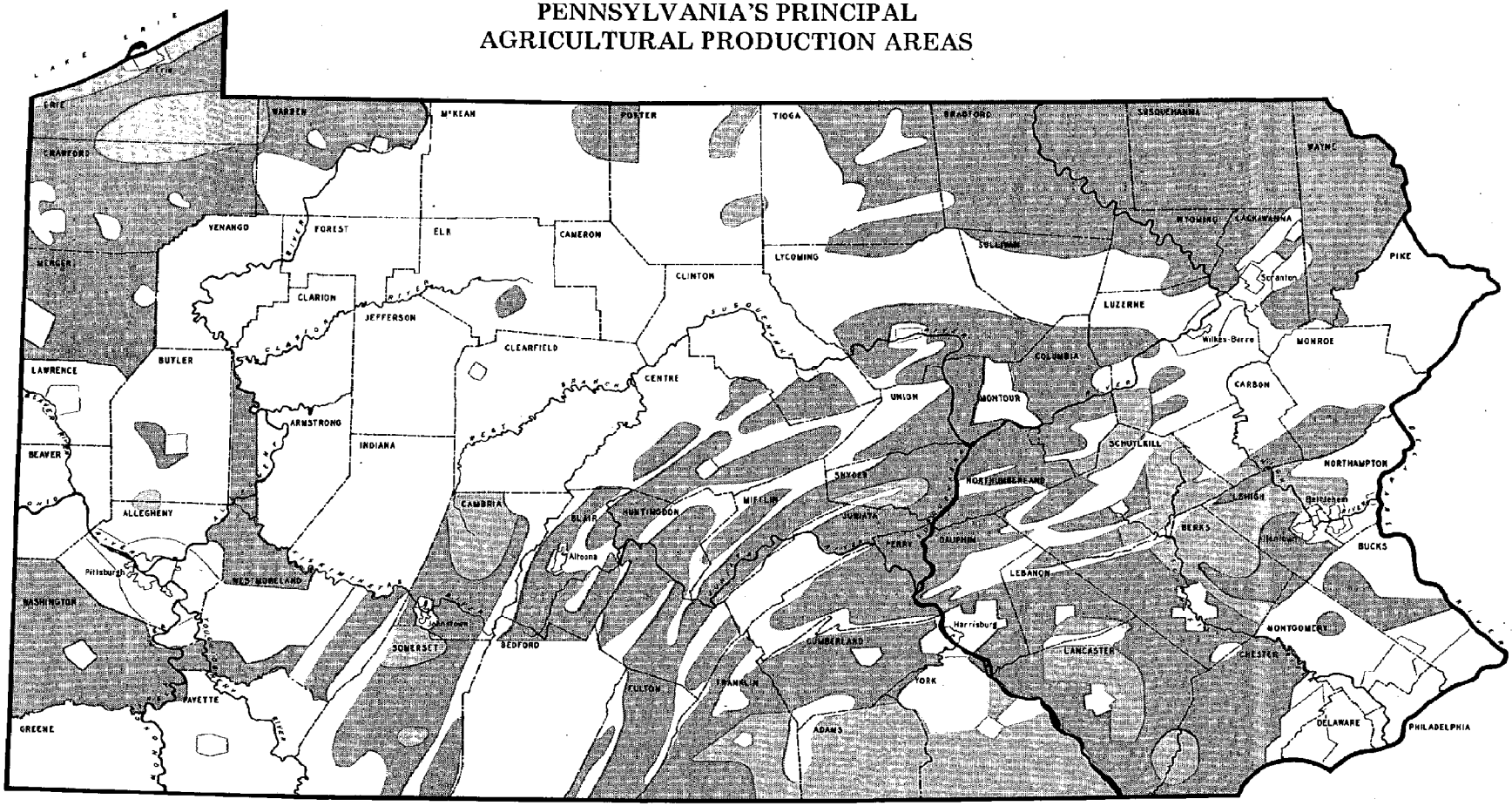
Class VI . . . . . .Soils which have severe limitations. Generally unsuited for cultivation. Use is largely limited to pasture, woodland, wildlife, or some recreation.

Class VII . . . . . .Soils which have very severe limitations, unsuited for cultivation. Use is largely limited to pasture, woodland, wildlife, or some recreation.

Class VIII . . . . . .Soils which have very severe limitations. Use is limited to watershed protection, wildlife, or some recreation.

SOURCE: Governor's Committee for the Preservation of Agricultural Land, *Final Report with Recommendations*, Harrisburg, Pennsylvania, December 1969.

PENNSYLVANIA'S PRINCIPAL AGRICULTURAL PRODUCTION AREAS



KEY:

- Urban — Agri-urban
- Fruit — Vegetable — Potato
- Semi-Agriculture
- Forested
- Dairy — Poultry

DATA SOURCE: Governor's Committee for the Preservation of Agricultural Land, *Final Report With Recommendations*, 1969.

Why Farmers Go Out of Business

There is no single solution to the problem of farmland disappearance; too many factors contribute to its conversion to other uses for any simple prescription to provide a cure. Reasons for farmland loss differ according to development pressures, regions of the State, the kind of farm and farmer, and other variables. Several problems are especially troublesome:

- tax structure, including assessment policies;
- cash flow shortages that reduce the ability of farmers to operate their farms efficiently — small farms are particularly hard hit;
- pressures for industrial, commercial, residential, and other development;
- ineffective zoning that crumbles before development pressures; often the farmer himself finds it necessary to sell lots to raise capital;
- public infrastructure investments such as roads, water, and sewer, that raise land values because of the development opportunities they generate;
- conflicts between farmers and other rural residents who object to the sights, sounds, and smells of a working farm. In turn, farmers' cattle are harassed by local pets, their fences broken, and property vandalized.

Basic to all these is the simple truth that farming, as an economic venture, cannot compete with alternative opportunities in the commercial and industrial sectors. No matter how rich the milk or high yield the corn, they cannot equal profits to be made from shopping centers, industrial plants, commercial development, or suburban subdivisions. Moreover, while farming as a way of life has advantages, it does not provide the income, mobility, security, fringe benefits, or social status available in other trades and professions.

Public policies that do not deal with these realities will not stem the loss of agricultural land, or the disappearance of the family farm.

Providing Relief

Farmers are faced with two sets of problems: immediate dollar issues, such as taxes, land valuation, and assessment; and more subtle concerns, including community relations, growth impacts, marketing, public services, and so forth. Both sets need to be addressed effectively. Among

suggested remedies, the following appear most promising (see also Appendix A);

1. To deal with immediate dollar issues:

   a. tax and assess agricultural lands for their agricultural rather than development values (preferential assessment in the Commonwealth is now authorized);

   b. enforce agricultural zoning, now largely a catch-all;

   c. adopt a system of deferred or severance taxation that keeps taxes low unless farmland is developed, at which time past taxes would fall due, with accumulated interest;

   d. encourage communities or local governments to enter into binding contracts with farmers, trading use-value assessments for assurance that lands would remain in agricultural production for a designated number of years;

   e. adjust the State inheritance tax to reduce the need to sell farmland to pay inheritance taxes.

2. To deal with other reasons for farmland disappearance, the following approaches are of more than routine interest:

   a. *Agricultural districts* — In New York State, farmers organizing themselves into districts receive certain benefits, including lowered assessment, state income tax advantages, assurances that public funds will not increase development pressures by providing water, sewer, and other facilities, and special consideration in the location of roads and public facilities.

   b. *Agricultural corridors* — This principle is similar to that employed in the British green-belts, and the agricultural zone surrounding Toronto.

   c. *A community plan* incorporating agriculture as the principal economic base. Zoning, assessment, and other incentives are employed to retain productive farmland. Growth would be planned so as not to weaken or deteriorate the agricultural base that supports the local economy.

   d. *Public acquisition* — Suffolk County, N. Y., has embarked on a program of purchase and leasebacks of agricultural lands to farm operators. Similar arrangements have been used in Canada for 40 years.

e. *Agricultural easements* — Public purchase of easements or development rights is a practical alternative to acquisition, but has gained little support in the United States.

f. *Development right transfers* would permit farmers to realize the development potential of their lands but continue to farm them. Rights to develop would be sold on the open market to builders who wished to increase development density where such development was permitted. Compensatory regulations, windfall/wipeout adjustments, and density (or performance) zoning are other suggestions for guiding development away from agricultural lands.

The Problem of Equity

Putting these proposals into practice often raises troublesome legal issues and basic questions of equity.

Uniformity of taxation is a legal requirement in most jurisdictions. It is also a fundamental concern of just taxation. Modifying the requirement, even for good cause, will stir resentment. Moreover, if farmers are relieved of a part of their tax burden, others must take up the slack. The lawyer, millworker, or small businessman may recognize the need for farms to grow his food, but not agree to subsidizing his rural neighbor to keep him in business. Yet without relief, the farmer cannot be blamed for selling out, and using the proceeds to earn a less arduous living — without continuing squabbles over taxes, assessments, and zoning.

The recently-enacted "Clean and Green" legislation is helpful, but does not go to the root of the agricultural problem. Experience in other states suggests that preferential assessment will not preserve agricultural lands against continuing pressures for development. The same holds true for Public Law 515, which permits counties to grant lowered assessments to farmers.

A Pennsylvania Agricultural Reserve (PAR)

If a healthy agricultural economy in Pennsylvania is to survive, returns on farming must be placed on a par with other land uses. For that purpose, a *Pennsylvania Agricultural Reserve (PAR),* is proposed.

PAR would be a state-wide program to help keep productive farmland in permanent agricultural use. It would (1) define, identify, and map farmland that should remain in agricultural production, and (2) encourage farmers operating such land to continue farming by offering them a range of PAR contract benefits. The program would operate as follows:

Contracts

- All farmers who qualified would be eligible to enter into PAR contracts with the State. The purpose of the contracts would be to put farmers on a PAR with other land users by providing the support needed to help them make a fair living at farming. In turn, farmers would guarantee to keep farmlands in agricultural production for the term of the agreement.
- Contracts would run from 5-15 years. As with any binding agreement, violations would be subject to appropriate penalties. The contracts would be transferable to other farmers, however.
- Counties and communities would be encouraged to enter into supplementary contracts to provide farmers in their areas additional benefits. Such supplementary agreements could be free-standing documents, or amendments to the basic PAR contract; in whichever form, the major goal would be that they contributed to a workable, equitable arrangement for conserving farmland between the State, the locality, and the farmer.

Eligibility

1. *Bona fide* farmers with the will, skill, and lands and equipment to continue farming would be identified. Selection would be based on a determination that the farmer:
   - had a history of continued, successful agricultural practice;
   - had the basic facilities, machinery, and credit needed to continue productive farming operations;
   - owned, or had reasonable access, to sufficient farmlands of Class I, II, and III to assure economic operations.

These farmers are the backbone of Pennsylvania's agriculture. Their location by community would be inventoried and mapped.

2. Although most PAR agreements would be with individuals, groups of farmers would be eligible, and could qualify for maximum benefits if substantial blocks of farmland were assured long-term protection.

Benefits

1. The Department of Agriculture, as administering agency, would have latitude to negotiate PAR agreements within the range of total benefits and maximum terms prescribed by law. Longer term agreements would have priority, and be eligible for maximum benefits.

2. PAR agreements could include all forms of technical and financial assistance presently available to farms and farmers in the State, and such additional benefits as may be authorized by new legislation. The total of these benefits would need to be sufficiently attractive to induce eligible farmers to enter into PAR agreements. The proportion of State agricultural assistance earmarked for PAR purposes would need to be sufficient to assure this.

3. Agreements would be tailored to the needs of individual farm operations, and vary according to individual circumstances. An older farmer faces a different situation from a younger one; a farm pressed by adjoining development has different problems from one in need of modernized equipment, or new outbuildings. PAR contracts would meet this range of needs by including any of a number of kinds of assistance, including:

   a. reduced assessment and taxation;

   b. state income tax assistance for rapid depreciation, and other benefits;

   c. low-interest loans for construction of new facilities or purchase of machinery;

   d. assurance that State funds would not assist in constructing new sewer, water, or other facilities that increased development pressures;

   e. safeguards to assure that State roads and other facilities did not jeopardize agricultural lands and production;

   f. increased technical assistance to help with tax problems, inheritance arrangements, credit, marketing, and to assist in improving farmer-community relationships.

4. Supplementary county or community agreements would provide benefits that can only be made available through local action, such as:
   - local tax benefits;
   - ordinances declaring farming to be the dominant use in designated areas;
   - appropriate zoning or subdivision regulations;
   - special local programs, such as development right transfers.

It will be critical that the program establishes a fair balance between private and public benefits. Costs may be high; to a degree they will measure the difficulties now faced by farmers. On the other hand, the experience of New York State's agricultural districts, a comparable effort, suggests that the PAR program would be financially practical. However, a pilot program to determine both costs and farmer acceptance should precede PAR's large-scale application.

PAR Advantages

PAR offers a means of delivering the help farmers need to stay in business, on terms that are fair to both the farmer and the tax-paying public. Its effectiveness will vary according to the degree of local government support, and the extent to which the legislature chooses to make additional benefits available. As with anything else, the PAR program can be no better than its ingredients.

But the strength of the program lies in its approach, as much as the assistance it can deliver. Modern farming is a complex business. Taxes are important, but so is credit; prices paid for equipment and fertilizer are critical, but so are prices received for products produced. Keeping up with new technology is difficult and expensive. And unlike other businesses, farmers are deeply affected by land use decisions over which they have little control.

The separate, individual, and *ad hoc* agricultural assistance programs now available deal only with some of these problems. Unlike other small businessmen, a farmer cannot turn to a single source that will help him to work out a comprehensive program for survival. The PAR program would provide such an approach, and much of the assistance for carrying it out.

So long as farmland conservation efforts are temporary, sporadic, and uneven, the loss of productive Pennsylvania farmlands will continue. PAR

offers a way to package and deliver needed assistance on a consistent, equitable basis; there would be no unfair advantage to the farmer, or inequitable burden to the taxpayer.

Pennsylvania's agriculture has long been a model for the Nation. It could extend that reputation by this direct, sensible response to the present challenge.

II. FLOODPLAIN MANAGEMENT

Pennsylvania has over 45,000 miles of flowing waters that periodically flood their banks. In 1972, most did, with unprecedented damage, dislocation, and human misery.

Nor was the Agnes disaster an isolated incident. In 40 years, Pennsylvania has suffered from 16 floods with damages totalling over $4 billion.[12] (See Table B, "Major Floods in Pennsylvania: 1936-74.") Yet development of the floodplain continues.

Past emphasis on structural controls — dams, dikes, and levees, costing over $1 billion — has proved inadequate. The Commonwealth and its communities must face up to the realization that only a comprehensive program of flood control and floodplain management can end such losses.

Floodplains and Flooding

Floodplains are defined by the United States Water Resources Council as areas adjoining rivers, streams, watercourses, oceans, bays, or lakes which *in the past* have been covered by floodwaters, or *can be reasonably expected to be covered in the future.* Both time frames are important.

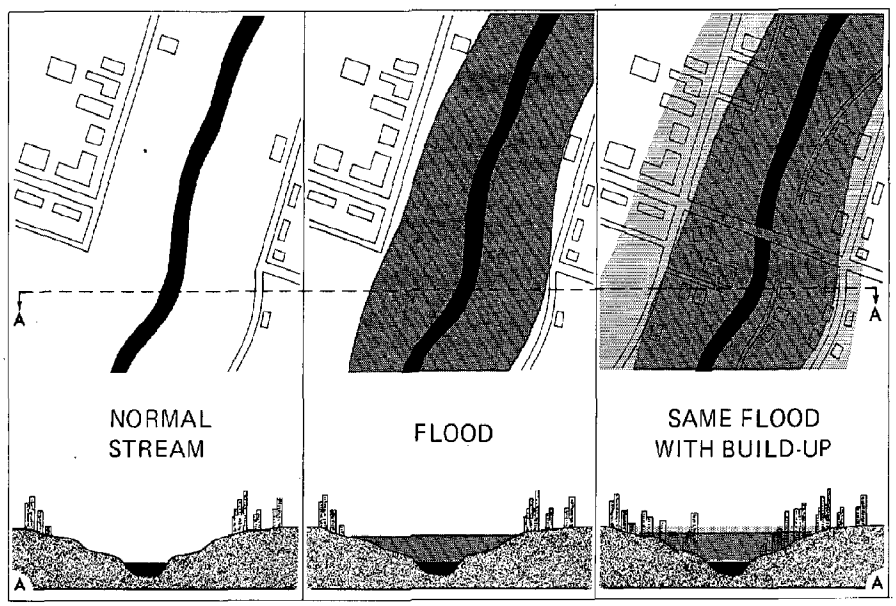
A floodplain can be divided into two parts:

- The *floodway* is the area closest to the water, and most likely to be flooded frequently. It is usually considered a high hazard area.
- A *flood prone area* lies beyond the floodway. Flood prone areas are designated by their probability of being flooded; a one hundred year floodplain includes the floodway, and floodprone land adjacent to it, which has a one percent probability of being flooded each year, and a one hundred percent probability of being flooded within one hundred years. (Of course, these are only probabilities; one hundred year floods could occur in successive years.)

[12] Dr. Maurice Goddard, *Statement Before the House Committee on Local Government*, October 23, 1974 (Harrisburg, Pennsylvania, 1974), p. 2.

CROSS-SECTION OF A FLOODPLAIN

SOURCE: U. S. Corps of Engineers, *Water Spectrum*, Vol. 6, No. 1, 1974.



Building in the flood plain can make floods wider and deeper.

The probability of flooding can be estimated in two ways: past flooding experience (the extent of past floods, and the area they covered); and any development that has caused an increase in run-off, and reduced water absorption. The area of a floodplain must therefore be considered elastic: it will vary according to changes in structures, sewers, and the like; and it may be calculated more accurately as flood forecasting improves. For these reasons, the precise acreage of floodplain area is not available for much of the Commonwealth.

In testimony before the House Committee on Local Government (hearings on Senate Bill 1122, Pennsylvania Flood Disaster Prevention Act, Oct. 23, 1974), Dr. Maurice Goddard, Secretary of the Department of Environmental Resources, concisely expressed the flood problem and the need:

> "The problems of flood damage in this Commonwealth can only be solved by a comprehensive Federal, State and local program. Among the elements of such a program must be:

(1) Public education to alert the public to the problems and importance of our flood plains;

(2) Flood control projects, to regulate the flow of flood waters;

(3) Flood-proofing of new development in flood prone areas;

(4) Floodplain planning and management, to guide and regulate the use of flood prone areas; and

(5) Flood insurance, to protect citizens from damages which cannot otherwise be avoided."

Recently enacted amendments to the National Flood Insurance Act (P.L. 92-234, approved Dec. 31, 1973) require communities to take steps toward reducing flood losses. Failure to comply can have serious consequences, including:

1. loss of Federal assistance for any acquisition or construction purposes;

2. denial of all Federally-insured real estate loans and mortgages; and

3. ineligibility for Federal disaster assistance after Fall, 1975.

Compliance by Commonwealth communities is likely to vary widely. Some communities have effective township codes and have enacted ordinances that specify permitted uses within designated floodplain areas. Others have ineffective regulations, or have taken no action at all. HUD has identified over 2200 Pennsylvania communities affected by the Federal program (which also includes mudslides and certain other hazards). So far, fewer than 800 have moved to comply with Federal flood insurance requirements.[13]

In most cases, Pennsylvania communities have relied on structural controls, acquisition and relocation, or flood-proofing. The first places them at the mercy of development control upstream; the second may be too costly; and the third has not always proved effective. (In some cases, increased damage has resulted. Homes that had been "flood-proofed" were later "popped out" of their foundations during floods by air trapped underneath them.)

Floods, and floodplain management, must be viewed in terms of entire river basins, not individual communities. There are two aspects to the problem: dealing with areas that have already been developed, and managing those floodplains that are still undeveloped. They represent two

[13] *Ibid.*, p. 5.

MAJOR RIVER SYSTEMS IN PENNSYLVANIA

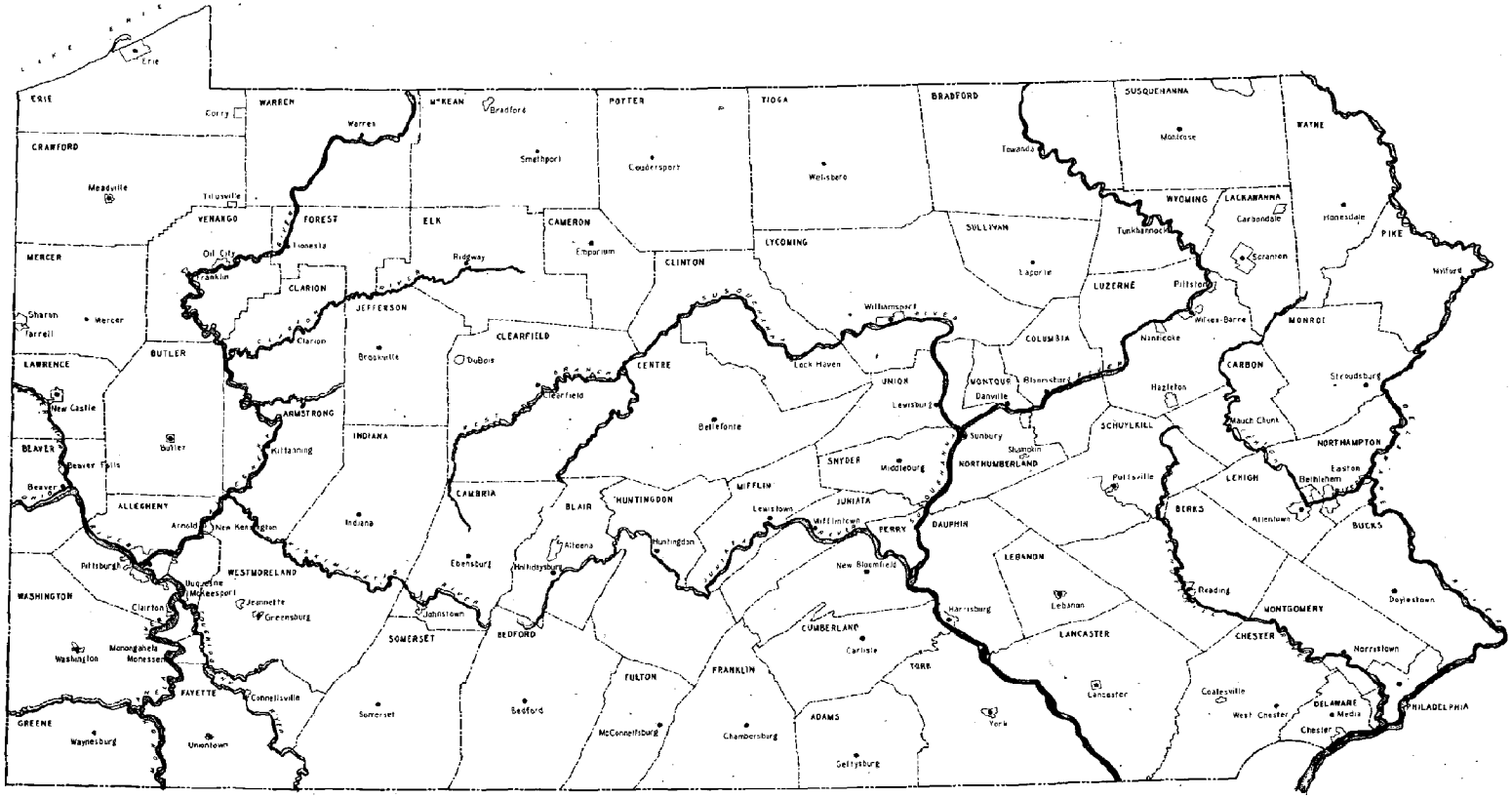


TABLE B

MAJOR FLOODS IN PENNSYLVANIA 1936-1974

Flood Date	No. of Damage Centers*	Total Amount of Damages	Major Damage Centers (damages greater than $1,000,000 each)	Major Streams Involved	Major River Basin
March 1936	212	$1,219,000,000	Punxsutawney, Brockway, Pittsburgh, Johnstown, McKeesport, Conway, New Kingston, Etna, Kingston-Edwardsville, Shickshinny, Scranton, Swoyersville-Forty Four, Wilkes Barre, Hanover Twp., Sunbury, Harrisburg, Steelton, Lock Haven, Williamsport, Milton, Lewisburg, Tyrone, Lewiston	Allegheny River Monongahela River Ohio River Susquehanna River W.Br. Susquehanna R. Juniata River	Ohio Susquehanna
May 1942	41	88,000,000	Allentown, Bethlehem, Slatington-Walnutport, Easton, Hawley, Hamburg, Downingtown, Scranton, Olyphant, Catasaqua	Lehigh River Schuylkill River N.Br. Susquehanna R.	Delaware Susquehanna
July 1942	7	12,000,000	Johnsonburg, Ridgeway	Clarion River	Ohio
Dec. 1942	17	5,000,000	Freeport, Tarentum	Allegheny River	Ohio
Nov. 1946	9	7,000,000	Athens	Susquehanna River N.Br. Susquehanna R.	Susquehanna
Oct. 1950	16	21,000,000	New Cumberland, Lock Haven, Williamsport (Newberry)	W.Br. Susquehanna R.	Susquehanna
Oct. 1954	36	36,000,000	Pittsburgh, East Pittsburgh, Freeport, Latrobe, Confluence, Sharon	Ohio River Allegheny River Shenango River	Ohio

TABLE B (Continued)

Flood Date	No. of Damage Centers*	Total Amount of Damages	Major Damage Centers (damages greater than $1,000,000 each)	Major Streams Involved	Major River Basin
Aug. 1955	116	$ 115,000,000	Scranton, Allentown, Yardley, Bethlehem, Easton, Hawley, Lackawaxon Twp., Norristown	Susquehanna River Lehigh River Schuylkill River	Susquehanna Delaware
Aug. 1956	16	15,000,000	Canonsburg, Carnegie	Chartiers Creek	Ohio
Jan. 1959	40	17,000,000	Meadville, Sharon	French Creek Shenango River	Ohio
April 1960	3	2,000,000	Meadville	French Creek	Ohio
March 1963	23	5,000,000	Canonsburg, Carnegie	Chartiers Creek	Ohio
March 1964	33	3,000,000		Allegheny River	Ohio
Dec. 1968	1	2,000,000	Presque Isle	Lake Erie	Lake Erie
June 1972	N.A.	3,000,000,000+**	N.A.	All	All

TOTAL NUMBER OF MAJOR FLOODS RESULTING IN GREATER THAN $1,000,000 DAMAGES EACH: 16

TOTAL AMOUNT OF DAMAGES FROM MAJOR FLOODS IN PENNSYLVANIA (1936-1974): Greater than $4,547,000,000

NOTES:

**Damage Centers are denoted as cities, boroughs, or townships sustaining damages from flooding.*

***Estimates for damages resulting from the Hurricane Agnes floods of June 1972 are incomplete at this time.*

SOURCE: Pennsylvania Department of Environmental Resources, 1974.

sides of the flood disaster coin: built-up areas must try for damage control, while undeveloped lands can aid in damage prevention.

Developed Floodplains

Floodplain communities can hardly be expected to move. But by intelligent planning and regulation, they can reduce damage and hazard to existing areas, and limit potential losses.

To meet HUD flood insurance requirements, most communities will adopt building permit restrictions, enact zoning ordinances, and limit uses in high hazard areas. These are useful measures, but they need to be supplemented by additional actions, such as:

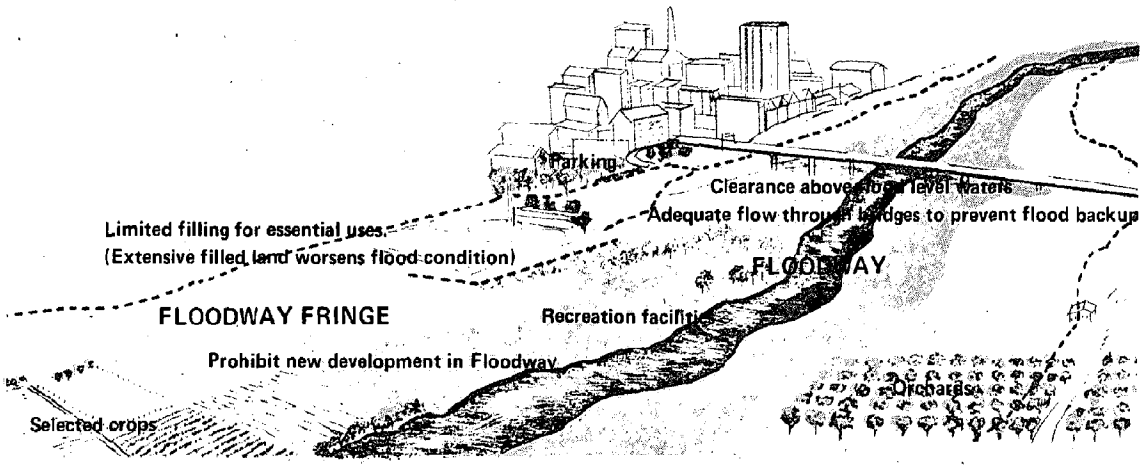
1. Informing the public of the risks of developing and rebuilding on floodplains by means of:
   - school programs;
   - discussions with civic groups; and
   - distribution of flood-prone area maps.
2. Providing notice to land owners, and potential purchasers of land, of the flood risks of specific pieces of property by:
   - public display of flood hazard area maps;
   - designation of flood-prone areas on all plats and subdivision maps; and
   - designation of flood risks on all new deed transfers.
3. Requiring developers, architects, engineers, and planners to notify clients of the added costs of structural flood protection devices, such as elevating floors, anchoring buildings, and so on.
4. Granting permits for new buildings on condition that run-off and other hydrologic changes be reported prior to construction, and holding builders, property owners, and public officials liable for legal action should such development result in increased damages.

Undeveloped Floodplains

Undeveloped floodplains offer major opportunities to a floodplain management program.

These areas can slow down and soak up floodwaters, help reduce turbidity, permit sediments to settle, and begin the process of stabilizing the natural hydrologic cycle.

USING THE FLOODPLAIN SAFELY



SOURCE: State of New York, *NYS Environment*, November, 1973.

They also have value for outdoor recreation, for fishing and hunting, and as open space. They may be of sufficient biological interest to qualify as natural areas. And they are valuable for farming and pasture — provided precautions are taken to prevent fertilizer run-off from polluting waterways.

Use for any of these purposes is desirable. It can be promoted by a variety of public actions, including:

- zoning;
- acquisition of fee title, flood easements, or development rights;
- purchase and lease-back arrangements;
- long term leases.

State and local parks, forests, and gamelands are appropriate beneficiaries of undeveloped floodplain sites; and flood-prone farmlands could be taken into consideration in drawing up PAR farmland conservation agreements.

Recommendations

The following steps are proposed to initiate an effective flood disaster prevention and floodplain management program for the Commonwealth:

- define, locate, and map all flood-prone lands;
- establish a two-pronged floodplain management program dealing with (1) developed, and (2) undeveloped floodplains;
- promote public regulation or acquisition of undeveloped floodplains to be used for scenic rivers, fish and wildlife habitat, natural areas, parks and open spaces, public access, and water recreation areas. Such sites should be managed by counties or communities whenever feasible;
- provide funds and assistance for voluntary relocation of persons and businesses wishing to move out of the floodplain;
- extend planning assistance, including preparation of model ordinances, to floodplain communities;
- determine capacity of existing structural controls, and amount and types of development which would render them useless, and enforce land use controls accordingly;
- initiate education programs to inform the public of the social, environmental, and economic costs of inappropriate use of floodplains;
- encourage regional planning and coordination as a basis for action;
- enact legislation similar to Senate Bill 1.

At the State level, the Department of Community Affairs (DCA), and DER would share responsibility for the program, the former assisting local governments to plan floodplain and flood control measures, the latter furnishing substantive guidelines and standards, and enforcing them. At the local level, communities should be encouraged to meet their particular needs through detailed plans that are consistent with broader programs. Each county land use program should have a flood control and floodplain management component. Regional agency support will be important for technical assistance, data collection and distribution, and coordination of county plans.

Need for Action

Some have declared floodplain use restrictions to be unnecessary intrusions on private rights and individual liberties. In their view, people

should be made aware of the risks, warned not to expect help if the flood arrives, and left to their own devices. Besides, this view concludes, people have always lived in floodplains and always will.

This is simple sophistry, and dangerous to boot. Many not living on or near the floodplain would suffer heavily if such indiscriminate action was accepted practice. Nor is it realistic to suggest that the State or community would not move to help those stricken by disaster. The record is all the other way; experience records that after initial emergency relief measures that cost taxpayers millions, more flood control structures are built at a cost of more millions, encouraging even greater use and occupancy of flood-prone lands. Storm and flood inevitably follow, and the cycle is repeated. It is a costly cycle in terms of human misery and economic loss, and should be broken.

III. MOUNTAINS

Overview

While not high or massive, the ridges of the Alleghenies and the deeply dissected northcentral plateau have shaped the Commonwealth's settlement pattern, located its transportation corridors, and deeply influenced its cultural and economic development.

Pennsylvania's mountain regions — which involve about 40% of the State — are:

- its principal water catchments;
- the sites of most of its coal, stone, gas, and other extractives;
- the major sources of timber, fish, game, and outdoor recreation;
- locations for most second-home developments, and nearly all State park, forest, and other public lands.

These rugged regions are now feeling the full impact of technology, population increase, and economic development. The distance and inaccessibility that shielded them from such pressures are yielding to better roads, improved air service, and faster communications. Increased demands for what the mountains offer — including energy sources — will further hasten this process.

Mountains magnify the consequences of misuse. Land disturbances tend to be more visible, severe, and lasting. This high vulnerability, limited

adaptability, and slow recuperation from abuse poses special land use problems. A strip-mined area on level ground can be restored to park, forest, or even agricultural use rather readily; not so on mountain contours. Power lines across flat fields give little visual offense; on a mountainside, they mar an entire panorama. Thus the need for special care in deciding how to use these valuable and fragile areas.

Happily, there is still a vast area of relatively unspoiled, rugged country in the Commonwealth. The scars of early use — logging, charcoal operations, and iron mines — have healed well, for the most part. There are still wilderness opportunities; still opportunities for hunting, fishing, and outdoor recreation unsurpassed in the eastern United States; and in a number of places, still magnificent landscapes of ridge upon ridge, rolling to the horizon unblemished by mine pit, road scar, or right-of-way cut.

But such opportunities will not survive without help. Unless thoughtful land use planning and management are installed, they will surely be lost to uncontrolled uses that are already nibbling at the fringes and pock-marking the heart of these regions. The mountains mean too much to Pennsylvanians to permit such indiscriminate development to continue. Coal must be mined, houses built, and jobs provided, of course. But hasty action, poor planning, or preoccupation with short-term profits can produce damage that generations of Pennsylvanians will have to live with.

Typical Ridge and Valley Landscape

A. Mining

Pennsylvania's mined-lands reclamation laws — perhaps the best in the Nation — require that lands disturbed by recent operations be restored. But old scars remain — an unhappy legacy:

- ravaged and barren sites aggregating hundreds of thousands of acres;
- at least 2,000 miles of streams polluted by acid mine drainage;
- burning and dormant refuse piles;
- smoldering underground fires; and
- dangerous subsidence areas.

Most of Pennsylvania has been mined for coal, stone, or some other extractive, but coal mining accounts for over half of the disturbed area — 64% to 86% according to various estimates. Much of this activity has affected the mountains and high plateaus.

It is estimated that from 225,000 to 250,000 acres of unreclaimed strip-mined lands, alone, are in need of treatment. Project 500 provided $200 million for Operation Scarlift, the principal State program for reclaiming disturbed areas.[14] As a rule, mine drainage and subsidence, rather than land treatment, have been given first attention. This, and other factors, has limited the land reclamation completed under Operation Scarlift to 3,525 acres in the seven year period ending December, 1974. By contrast, private operations reclaimed nearly 13,000 acres in 1973 alone. Estimates of the cost of reclaiming the remaining quarter million acres so that they no longer pose environmental problems range from $5-15 billion. Their reclamation to usefulness for other purposes — agriculture, industry, recreation — would cost much more.[15]

Acid mine drainage is of particular concern in the mountain regions. In 1959, the Pennsylvania Senate Select Committee on Water Resources reported that:

> "One of the most serious problems we face in Pennsylvania is the fact that some 2,000 miles of our streams are polluted with

[14] Beverly A. Robinson, "Strip Mined Lands in Pennsylvania: A Brief Review of the Problem" (unpublished, Graduate School of Public and International Affairs, University of Pittsburgh, 1974), pp. 8, 12-13.

[15] 1972 Estimate, Office of Resources Management, Pa. Dept. of Environmental Resources (Harrisburg, Pa., 1972).

acid-mine drainage emanating from both subsurface and surface (strip-mining) operations. The Sanitary Water Board has carried out a successful program in preventing further deterioration of streams by mine drainage, but the problem of discharges from active and abandoned mines located along already acid streams has certainly not been solved."[16]

A State Department of Health survey in the mid '60's revealed that about 3,000 miles of streams were polluted by acid mine drainage.[17] Subsequent clean-ups have reduced this mileage, or decreased the severity of pollution in streams still affected. But Pennsylvania is a long way from resolving acid pollution problems, and mountain regions are heavily affected; daily, millions of gallons of acid water still pollute the Susquehanna River drainage, alone.

Dealing with the aftermath of surface and deep mining warrants a separate study; it can hardly be done justice here. The relationship of mining to land use is so close, however, that attention is invited to particularly pressing needs for action, such as the following:

1. Direct reclamation efforts toward complete treatment of individual drainages.
2. Adopt an official mining data base for use by all State agencies. The form and content of this information system should harmonize with those employed by Federal agencies, and serve the needs of industry.
3. Continue inventory work to locate sources of acid mine drainage, dust, and burning gases.
4. Require maps of new mining operations to accompany all permit applications. Such maps should include ingress and egress routes, location of existing or proposed spoil piles, and of old and newly disturbed areas. These maps could be the basis for public/private sharing of reclamation efforts.
5. Extend land reclamation efforts through continuation of Operation Scarlift.

[16] Department of Environmental Resources, *Summary Statement: Present and Anticipated Water Problems of the Commonwealth of Pennsylvania* Senate Select Committee on National Water Resources (Harrisburg, Pa., 1959), p. 2.

[17] Walter Lyon, Department of Environmental Resources, (Harrisburg, Pa.), telephone conversation.

B. Second-Home Developments

Although "a place in the country" has been a goal of many for generations, large-scale second-home developments are relatively new to the American housing market. In Sweden, nearly half the families have second-homes — usually modest cottages, by American standards. In the United States, only a small fraction of families have two homes, but that number has been growing rapidly.

Sale of Lots

An important distinction should be made between lot sales and sales of second-homes. Much of the criticism levelled against "second-home" developments is more accurately directed against promoters who sell lots, not houses. Too often, such lots may be where:

- homes cannot or should not be built;
- water, sewer, and other necessary services are not, and may not become available;
- year-round access is limited; and
- fire, police, and other public services are inadequate.

If lot sales are advertised inter-state, the provisions of the Interstate Land Sales Act offer some protection. But the major burden of controlling such sales practices falls at the county and community level.

A few agencies have acted to assist the buyer of rural land, such as the Endless Mountains Resource Conservation and Development Project. This kind of consumer protection is rare, however; in most rural and mountain areas of the Commonwealth, zoning, subdivision regulations, or other action to control such land sales is inadequate or non-existent. In such areas, local governments could perform few services of greater value to the well-being of their communities than to insist that lot sales conform to reasonable standards of health, safety, and environmental protection. An appropriate test would be whether houses could be built that met the criteria for second-homes suggested below.

Second-Homes

Second-home developments present a different set of concerns. Recent studies show that, over time, communities planned and sold

as vacation developments tend to become indistinguishable from "first-home" developments:

- older people retire to their second home;
- year-round vacation uses generate a need for usual public services;
- job opportunities are created by new commercial and industrial ventures;
- and soon the community becomes much like any other.

For these reasons, second-home developments should be subject to criteria at least as stringent as for any other housing development. Building permits should not be issued unless conditions are satisfied concerning:

- water pollution;
- sewage disposal;
- soil erosion and sedimentation;
- highway congestion;
- availability of public services and facilities;
- effect on scenic, aesthetic, and historic values;
- compatibility with official county or local plans.

The Poconos have been more affected by lot sales and second-home developments than other Pennsylvania mountain regions. Dr. Robert MacMillan of the Monroe County Planning Commission summarized the problem in an *Easton Express* article:

> "We just have to face the reality that there is a saturation point. We just cannot permit unlimited development if we want to maintain any semblance of the natural beauty the Poconos are known for. The streams are polluted and becoming more polluted; the traffic on our roads is congested and is becoming even more congested. There's a limit to the influx of people the area can tolerate."[18]

Pennsylvania remains one of the few major states without an intrastate land sales act; an act was proposed in 1972, but not

[18] Dr. Robert MacMillan, "Site Developers Insist They Serve Public Good," one of a series of articles detailing "The Rape of the Poconos" in the *Easton Express*, 1972.

passed.[19] Appropriate legislation to protect consumers, and to preserve environmental quality, should be reconsidered and enacted at an early date. In the meantime, counties and communities can help assure that lot sales and second-home developments do not create the conditions Dr. MacMillan describes through such measures as:

- planning;
- zoning controls;
- subdivision regulations;
- enforcement of on-site sewage disposal requirements;
- requiring environmental impact analyses for developments of more than 20 lots; and
- consumer education.

C. Public Development

Roads and bridges are important in determining where development will take place, particularly in the mountains. Decisions must be made with special sensitivity to the landscape values involved.

The record of the Pennsylvania Department of Transportation (PennDot) in this regard is mixed; in the case of bridges, for example, there has been a stubborn insistence that older steel girder spans be replaced with wider concrete structures, including solid concrete sidewalls that completely block upstream and downstream views. Wider approach ramps also often require basic alteration of contiguous streets.

In larger cities, construction to this standard may be necessary; in rural and mountain regions it often is not. No one wishes to create or continue hazardous situations; quaintness is no justification for ignoring safety. Yet a sensitive and skillful eye to the design of bridges, culverts, and road cuts could do much to preserve landscapes that, in fact, are likely to prove of greater long-term economic benefit than will be produced by widening and straightening roads to unrealistic speed and use standards.

In contrast, many of the roadside rest areas constructed by PennDot are models of tasteful, functional design. Scenic overlooks, also, have

[19] John Harenza and Susanne Lorenzi, "The Misuse of Land: Rural Lot Sales and Vacation Homes: Elements of A Pennsylvania Land Policy" (unpublished, Graduate School of Public and International Affairs, University of Pittsburgh, 1974), p. 14.

been well-placed and engineered. The heavy use of these facilities is ample evidence of public satisfaction.

By controlling access to State roads, PennDot, in fact, exercises important development controls. These can be used to reinforce local land use programs by insisting that access to State roads be in accordance with county or community plans. Sign and billboard locations should be similarly coordinated.

A Scenic and Historic Roads Network

The superb scenic assets and rich historic past of Pennsylvania warrant the Commonwealth's best efforts to preserve and display them.

Establishment of a scenic and historic roads network would be a most fitting observance of the Nation's bicentennial.

Roads of superior natural or historic quality could be designated, and points of historic or cultural interest identified and described. Counties and communities could incorporate additional points of interest and recreational opportunities.

Purchase of scenic easements and development rights to protect landscapes of special beauty should be a part of such a program. The experience of Wisconsin, in the case of the Great River Road, indicates that such easements are practical and modest in cost.

A Covered Bridge In Southwestern Pennsylvania

D. The Good Life

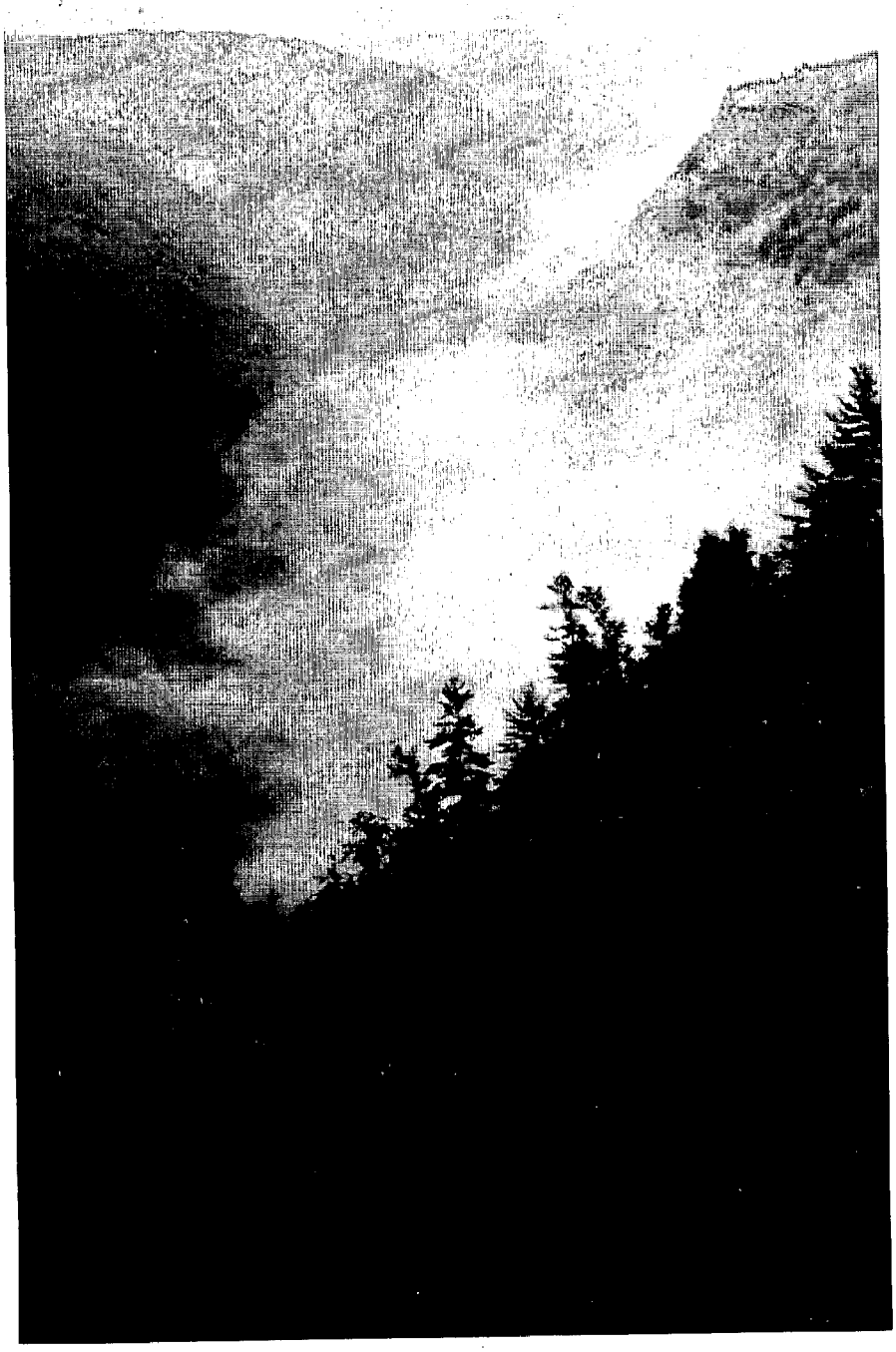
Few other states are blessed with the Commonwealth's abundance of scenic and outdoor recreation opportunities; how these assets are husbanded will determine the quality of life enjoyed by many Pennsylvanians.

Commonwealth agencies generally have managed the lands in their custody sensibly, and in the public interest:

- Pennsylvania's park system is unsurpassed in the Nation;
- the State Game Commission exercised great foresight in acquiring substantial acreages of game lands;
- DER and the Fish Commission have worked diligently to improve the quality and carrying capacities of the State's waters;
- State forests are being managed competently, with increased attention to multiple use.

The following recommendations are proposed in the spirit of advancing this distinguished record:

1. *Regional emphasis* — Mountains have a character and identity of their own: the Laurel Hill region in the southwest is a different kind of place than the Poe Valley area, and both differ from Pine Creek. Interpretive efforts and exhibits that help users understand the distinguishing historic, geological, and ecological characteristics of mountain regions would add much to the recreational experience.
2. *Recreation corridors* — Recent emphasis on long distance hiking, cross-country ski trails, and extended canoe routes have helped to better relate individual parks to their regions. This work should be expanded to include bicycle routes, and to tie into scenic and historic roads, parkways, and canals.
3. *Diversity of opportunities* — Much attention is paid to providing stocks of fish and game for the Commonwealth's two million hunters and fishermen. License fees support this work, and it is fair that sportsmens' funds be spent to provide hunting and fishing opportunities for them. Yet greater diversity of wildlife management goals would serve non-hunters and non-fishermen who also pay their share of taxes.



Pine Creek

A broader concern for all species of fish and wildlife, including natural predators, would better serve that growing proportion of users who do not hunt or fish, but enjoy wildlife photography, hiking, white-water canoeing, cross-country skiing, nature study, rock-climbing, cave exploration, and simply walking and looking. A better balanced wildlife population also would cut down deer losses from starvation, and road kills (over 25,000 deer a year are killed on Commonwealth roads). Moreover, it would not require the massive clear-cutting now necessary to assure that sufficient seedlings for reforestation will survive over-browsing by unnaturally high deer populations.

4. *Outdoor education* — There is much truth in the remark that we develop land for people, but not people for land. Most people know little about the natural world around them. Basic information about geology, history, plants, and animals is often unknown — a clear challenge to educational institutions at all levels, to the interpretive programs of resource agencies, and to the media. What is understood is far more likely to be appreciated and used wisely. It is likely, also, that pressure against better known outdoor recreation activities would be relieved if people learned new ways of enjoying forest, field, and stream. A State-organized and supported program teaching people how to use, understand, and enjoy the natural assets of the Commonwealth is strongly recommended.

5. *Land acquisition* — The State now holds title to nearly 11% of the land in the Commonwealth. Yet certain kinds of land still need to be acquired to provide the public full use and benefit of areas already in public ownership. Other sites are key to the appropriate development of a region, and merit public control.

   In-holdings — Most State land-managing agencies are acquiring in-holdings as budgets permit. Wherever possible, clear title should be secured, and all other rights extinguished.

   Leases and permits — Long-term leases for cabin-sites simply constitute private in-holdings for the duration of the use. Such leases deny the public the use of the site, and limit management options; they should not be issued or renewed. For the same reason, applications for any private use and development should be carefully reviewed as to their relationship to present and proposed public purposes and management objectives. This is a difficult and sensitive issue; DER is to be commended for having had the courage to begin phasing out long-term cabin-site leases.

Acquisition of key tracts — Ownership of a key parcel can either assure or deny access to a much larger area; access to water-related recreation opportunities is a case in point. Public funds spent to insure that riverfront and streambank lands will always be readily available to the public are well employed. The efforts of the Fish Commission in this regard are to be applauded. Valuable public benefits are also obtained by acquiring fee title, easements, or development rights to permit linking up trail systems, and to serve as buffer areas for other public holdings.

The Management Challenge

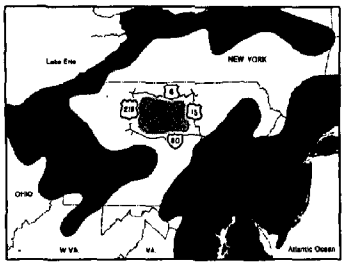
More than most landforms, mountains force sharp choices:

- private or public rights;
- short term or long range benefits;
- environmental protection or economic necessity.

In making such decisions, a useful test may be to consider whether the course selected will help preserve and promote what William Penn described as "this green and pleasant place."

E. The Northcentral Highlands: A Special Opportunity

It is within the grasp of the Commonwealth to protect for all Pennsylvanians the last major region between the urbanized east and the industrial midwest still largely unspoiled and undeveloped. But the opportunity will fade quickly if random development is not halted.

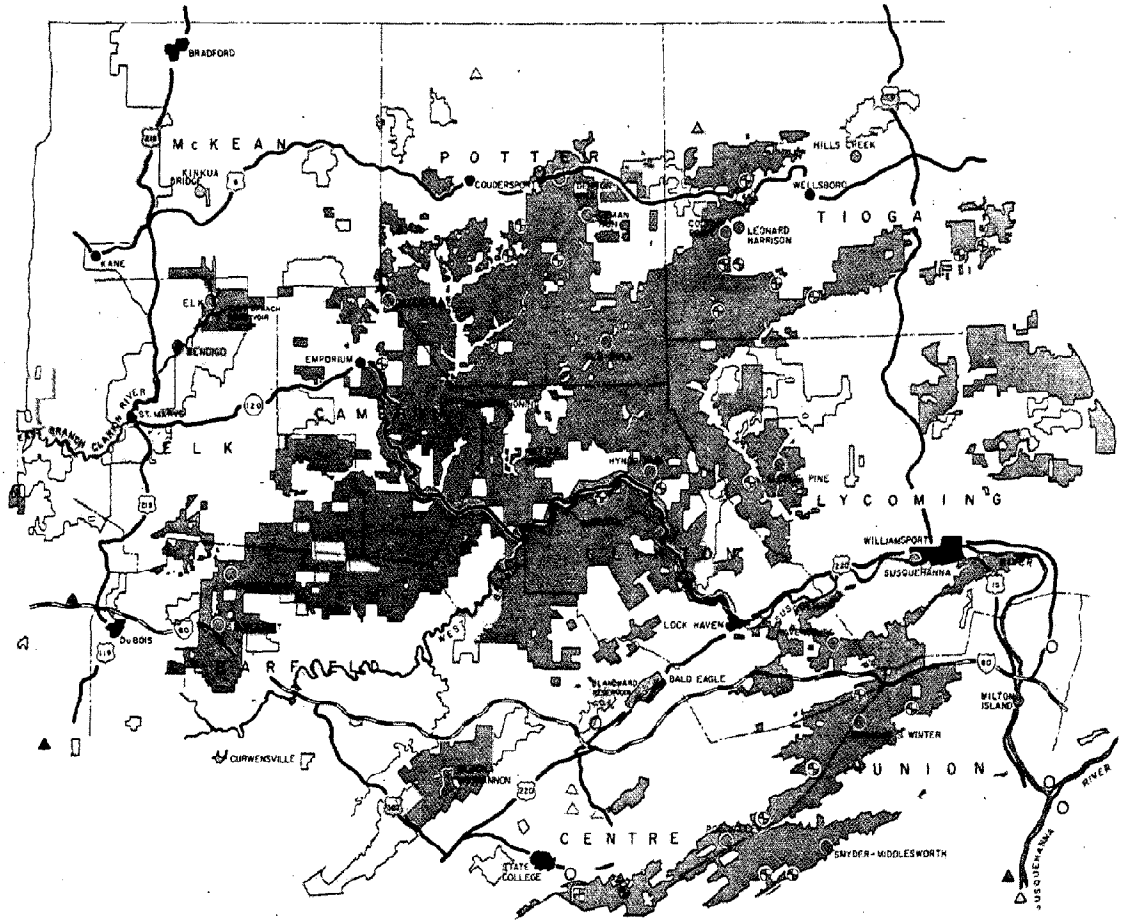


LOCATION OF THE
NORTH CENTRAL HIGH MOUNTAIN AREA

Projected Urban Area 1980

North Central High Mountain Area

NORTH CENTRAL HIGH MOUNTAIN AREA



MAP X—45
NORTH CENTRAL HIGH MOUNTAIN AREA

EXISTING STATE PARK
- More than 1,000 Acres
- Less than 1,000 acres

STATE FOREST
STATE FOREST PICNIC AREA
STATE HERITAGE AREA
STATE HISTORICAL AND MUSEUM COMMISSION SITE
STATE GAME COMMISSION LAND

STATE FISH COMMISSION
- ACCESS AREA
- LAKE
- HATCHERY

U.S. FOREST SERVICE
U.S. CORPS OF ENGINEERS OPERATED RESERVOIR
INTERSTATE HIGHWAY—Proposed and Existing
U.S. HIGHWAY—Major
STATE HIGHWAY—Major

From *Outdoor Recreation Horizons.*
Prepared for the Department of Environmental Resources by Fahringer, McCarty, Gray, and Associates.

The Northcentral Highlands of Pennsylvania is a vast region: generally it is agreed to extend from Interstate 80 north to State Route 6, or the New York State line; west to Route 219, or the Allegheny National Forest; and east to Route 220, or the eastern border of Bradford, Sullivan, and Lycoming counties. U. S. Route 15 has also been proposed as the eastern boundary (see map).

More than 2.5 million acres of this area is in State ownership — a larger proportion of the total than the portion of the Adirondack Preserve owned by the State of New York. The parks, forests, and game lands that comprise this area include some of the most rugged and scenic lands in the Commonwealth:

- Pine Creek, a leading candidate for scenic river status, and the Loyalsock, another stream of breathtaking beauty;
- the Hammersley, Quehanna, and other major wilderness opportunities;
- many of the oustanding natural areas in the State.

Fish and game are plentiful. Outdoor recreation opportunities for every taste and season are abundant. And the region provides valuable conservation benefits to other parts of the State: watershed protection, stream flow regulation, and more.

Indiscriminate development, public and private, is chewing away at much of this area. Unless protected soon, its superb natural qualities will be marred, and ultimately lost.

Halting all development is not necessary. What is needed is official State recognition of the region's assets, and action to secure them permanently. For this purpose, a four point program is proposed, directed towards:

- conserving and enhancing the irreplaceable natural features of the Highlands — wilderness, scenic, and other sites of outstanding quality;
- increasing the number and diversity of outdoor recreation opportunities;
- stabilizing stocks of fish and wildlife at maximum natural carrying capacities; and
- assisting towns and businesses to take advantage of the region's natural setting without reducing its quality.

These goals are attainable:

- wilderness is still available to set aside;
- intensive day use recreation facilities can be developed in buffer areas around the big back country;
- community growth and roadside development can be guided to serve needs of both people and landscapes;
- private land development can be assisted to preserve natural values without denying owners reasonable use of their lands.

DER could appropriately lead a Northcentral Highlands program. Planning and development agencies serving the region, and several of the concerned counties, have displayed active interest in participating in the effort. These initial steps are recommended:

- prepare an inventory and evaluation of the physical features and environmental values of the Highland region;
- relate this information to appropriate land uses; and
- recommend administrative and legislative actions necessary to install a viable Northcentral Highlands land management program.

The Highland region should have an official, individual identity. To confer such special status on the area, it may be desirable to seek approval of the electorate through a Constitutional amendment. All Pennsylvanians will share in the benefits, and bear a part of the costs. They should have an opportunity to decide directly whether they wish to do so.

Creating a Northcentral Pennsylvania Highland would be a major undertaking; to succeed will require imagination, good faith, and full cooperation of the many interests involved. At stake is a natural centerpiece for the Commonwealth that would be used, respected, and admired by generations of Pennsylvanians, and millions of their guests from other states.

"For a moment in time, this vast forest still reminds us of our natural heritage of Penn's Woods. But in the absence of controls, the region will inevitably be eroded by indiscriminate development until its unique character is lost forever."

J. C. Whetzel, commenting
on the Northcentral Highlands.

Part III

Critical Environmental Areas: Lands of Special Value

"At our arrival we found it a wilderness . . ."

— letter to England by Richard Townsend, who arrived in Pennsylvania with William Penn

PART THREE

CRITICAL ENVIRONMENTAL AREAS: LANDS OF SPECIAL VALUE

Overview

A parcel of land may be equally useful for housing, commercial development, or a public facility. In other instances a site may be capable of serving several needs, but clearly better-suited for one of them.

In critical environmental areas, such varied use is seldom possible. For these are lands with unique or rare features that can be reproduced with difficulty, if at all; any use that might damage their special natural or cultural values must be excluded. In Pennsylvania, critical environmental areas include wilderness sites; natural areas; historic and cultural sites and buildings; and wetlands and coastal areas.

The fragility and rarity usually associated with critical environmental areas require rigid controls to protect the values at stake. Few compromises are possible. Choices are sensitive and difficult. Judgment may depend on aesthetic, cultural, and ethical beliefs as much as on objective analysis. To some, wilderness is waste; to others, essential spiritual nourishment. Decisions are often irreversible, further sharpening the issue:

- a wilderness developed for a ski area cannot be reclaimed;
- an historic building that falls under the wrecker's ball is irretrievably lost.

In most cases, contests are between generalized, long-term public benefits, and immediate economic return to an individual or a community.

Two general recommendations with respect to critical environmental areas are made at the outset:

1. *When close choices are necessary, the policy must be that long-term public benefits take priority; the risk of permanent loss or damage is too great to decide otherwise.* If such decisions do sufficient damage to private interests, restitution can be made. (But failure to assert the public interest for fear of high damage awards is unfortunate, and often unnecessary: recent court opinions have viewed decisions to preserve wetlands and other critical environmental areas as a proper exercise of governmental powers, and not takings requiring compensation.)

2. *Claims to special protection must be supported by substantial evidence.* Quantitative measurement of values may not be possible, but clear definitions and definitive standards can be devised against which the quality of individual sites may be measured. For this purpose accurate, up-to-date inventories are essential management tools.

I. WILDERNESS

No natural resource management issue has been more volatile, emotion-ridden, or bitterly-contested than that of wilderness area definition, designation, and management.

The Wilderness Act of 1964 defined wilderness as a tract of land where human intrusion is "substantially unnoticeable," and suggested that such areas usually should be over 5,000 acres in extent. On occasion, the U. S. Forest Service has argued that "true" wilderness areas do not exist in the East, since human influence has intruded nearly everywhere; others, including the Act's sponsors, insist that a number of eastern national forest areas do merit wilderness designation. Four such sites are under study in the Allegheny National Forest.

It seems fruitless and divisive to extend these arguments to other Pennsylvania lands. Instead, *it is recommended that wilderness areas be selected on the basis of the character and quality of experience they can provide, rather than on inflexible standards of former use or condition.*

Why Preserve Wilderness?

The most powerful justification for wilderness preservation may be the simple declaration that some few remnants of man's global environment should remain uninfluenced by his presence. More pragmatic arguments include:

- the unmatched recreational experience they can provide;
- the scientific value of having large, undeveloped areas available to serve as outdoor laboratories for ecological and other scientific studies; and
- the requirement of some species for large areas of natural habitat as a condition of their survival.

Guides for Selection

Since individual perceptions of wilderness vary, selection of wilderness areas is bound to be essentially a subjective process:

A stand of virgin timber — Somerset County, Pa.

- for some, natural quality is most important;
- to others, a boundless expanse is necessary to insulate against man's works;
- another group finds solitude the most precious wilderness ingredient;
- still others believe the most important consideration is whether human influence is noticeable.

These views can often be reflected by three more objective considerations: size, topography, and location.

The 5,000 acre minimum suggested in the Wilderness Act is a useful rule of thumb. But areas of lesser size may qualify if their natural quality and location are superior. Conversely, because an area is over 5,000 acres, and has escaped development, should not automatically qualify it for wilderness status. The potential of a site for restoration to wilderness condition may be as important as the degree of present development.

The unique character of an area — its ruggedness, dramatic landscape, or other special qualities — also should be considered. And its location may be critical — if wilderness opportunities are not available in the region, a lower standard of both size and condition may be acceptable.

Additional guides for selection include:

- threat of loss, through development or otherwise, unless promptly protected;
- availability of the area, including buffer lands, by reason of state or other favorable ownership;
- ease and cost of acquisition by comparison with other areas of equal quality.

WILDERNESS SITES IN PENNSYLVANIA

An inventory of existing and potential wilderness sites in Pennsylvania has not been made. However, several surveys conducted by public agencies or private groups, and available data from public land-owning agencies, suggest a number of areas of wilderness quality. Eight of these are over 25,000 acres in size, and constitute the largest, and thus in one sense the most valuable, sites. Two areas — the Quehanna (Clearfield and Elk counties), 50,000 acres, and the Hammersley (Potter and Clinton counties), 31,000 acres — are on lands owned by the State Bureau of Forestry. Six others are on State Game Lands (see Table C).

A comprehensive inventory of areas less than 25,000 acres is not available for all public lands. The recent inventory of State Forest Lands for potential wild and natural areas lists 14 areas of over 3,500 acres. Those areas proposed for natural area designation would receive wilderness protection under existing DER regulations; however, those proposed as wild areas would be subject to certain management practices, such as timber cutting, which are incompatible with wilderness management.

Initial inventories of the Allegheny National Forest by a private citizens' group have identified four areas which appear to have wilderness quality (see Table C). All but one of these (Minister Creek), have been formally proposed as wilderness study areas in pending legislation in Congress.

It should be emphasized that the areas already known, as well as those which may be identified in the future, are not all now of the wilderness quality. However, they constitute large, relatively undeveloped areas in which evidence of past human intrusion is relatively unnoticeable.

The Stony Creek Valley area (St. Anthony's Wilderness) is under particular threat. This prime wilderness site is unique for its large size and convenient location; it is within a 30 minute drive of Harrisburg. The pump-storage facility and reservoir planned in the heart of the area can destroy the wilderness value of the entire site. The Quehanna and Hammersley areas also have been affected by development to some

TABLE C

POTENTIAL WILDERNESS SITES IN PENNSYLVANIA

NAME	OWNERSHIP	COUNTIES	ACRES
Quehanna	Elk-Moshannon SF	Clearfield-Elk	50,000
State Game Lands #44-54	State Game Commission	Elk and Jefferson	45,800
State Game Land #13	State Game Commission	Sullivan and Columbia	39,120
Stony Creek—State Game Land #211	State Game Commission	Dauphin	35,000
State Game Land #57	State Game Commission	Wyoming and Luzerne	33,237
Hammersley	Susquehannock SF	Potter-Clinton	30,984
State Game Land #127	State Game Commission	Monroe	25,079
State Game Land #75	State Game Commission	Lycoming	25,026
Bucktail	Sproul-Elk SF	Clinton-Cameron	13,714
Hickory Creek	Allegheny NF	Warren	12,800
Martins Hill	Buchanan SF	Bedford	11,544
Tracy Ridge	Allegheny NF	Warren-McKean	10,000
Allegheny Front	Allegheny NF	Warren	9,500
McIntyre	Tiadaghton SF	Lycoming	7,498
Wolf Run	Tiadaghton SF	Lycoming	7,032
Pine Creek Gorge	Tioga SF	Lycoming	5,720
Minister Creek	Allegheny NF	Warren	5,500
Tuscarora	Tuscarora SF	Perry-Juniata	5,382
Quebec	Forbes SF	Fayette	5,200
Hook	Bald Eagle SF	Union	5,119
Thickhead Mtn.	Rothrock SF	Centre-Huntingdon	4,886
Fish Dam	Sproul SF	Clinton	4,800
Miller Run	Tiadaghton SF	Lycoming	4,000
Asaph	Tioga SF	Tioga	3,831
Algerine	Tiadaghton SF	Lycoming	3,727
White Mountain	Bald Eagle SF	Union-Mifflin	3,581

SF — *State Forest*
NF — *National Forest*

SOURCE: Sam Hays, *"The Stony Creek Wilderness: A Unique Pennsylvania Asset."*

degree. Here too, further intrusion can be expected unless protective regulations are strengthened and enforced.

Management Recommendations

1. An atlas of potential and designated wilderness sites should be completed and kept current. One means for accomplishing this would be establishment of a continuing committee whose members were representative of the Federal and State agencies involved. Such a committee could also develop standards for selection and management of wilderness areas, based on guidelines such as those suggested here. Provisions should be made to assure full opportunity for citizen participation in designating and managing wilderness areas.
2. Copies of the atlas should be made widely available. Such information would help reduce many pressures and conflicts due simply to ignorance or misunderstanding.
3. Studies and investigations necessary to reach decisions on sites already identified should be completed promptly. In the interim, no development or other action that might jeopardize their wilderness designation should be permitted. The U. S. Forest Service should be urged to take similar action with respect to sites within the Allegheny National Forest.
4. Priority should be given to protecting the wilderness values of St. Anthony's Wilderness (Stony Creek), the Hammersley, and the Quehanna. These three areas are probably Pennsylvania's last hope for retaining wilderness areas of such size.
5. Prohibition of development should be the guiding management principle. Present roads or structures should not be maintained, except for existing trails.
6. Permission should not be granted for incompatible uses such as mining and mineral extraction, logging, grazing, oil and gas exploration and development, impoundments, or rights-of-way.
7. Extended use — back-packing and overnight camping, for example — should be limited to larger sites, where a stay of several days may be needed to fully appreciate the area. Only day use should be permitted on smaller areas. (Five thousand acres may be an appropriate dividing point, depending upon topography and shape of the particular site.) These limits are necessary to prevent overuse.
8. Given the predator imbalance now existing over most of the State, hunting and fishing should be permitted. However, land-managing agencies must be prepared to ration entry for this or any other purpose when use pressures threaten wilderness values. Compromise

on this point will undercut the basic concept of a Pennsylvania wilderness program.

This listing proposes some severe restrictions. They are necessary. The nature of wilderness does not permit compromise: either the values at stake are recognized, cherished, and safeguarded, or they are lost. Halfway measures will not do.

II. NATURAL AREAS

Pennsylvania contains a diversity of plant and animal communities unequalled in most other states. To preserve this endowment for all generations, a system of natural areas should be developed that illustrates the wide variety of flora, fauna, and geology indigenous to the Commonwealth.

Natural areas are defined as naturally occurring biological or geological units where conditions have remained relatively undisturbed. Since the principal reason for setting them aside is their value as baseline sites for study, the major management objective must be to preserve their natural condition. In effect, they constitute living laboratories and museums — irreplaceable opportunities to better understand the natural world around us.[20]

Too often it is only the unique, dramatic natural event or condition that is preserved. As interesting and important as such areas may be, it is also necessary to protect areas that reflect what is typical and representative. A State natural areas program should be more than a group of unique or outstanding sites; it should provide a spectrum of scientific and educational opportunities for understanding the principal physical and biological features native to Pennsylvania. Accordingly, the criteria suggested here are designed to produce a Pennsylvania natural areas program that represents a reasonably complete storehouse of biological information for the State, including both typical and unusual biological communities, and important geological features.

Why a Natural Area System?

Natural areas are important for their scientific, educational, and ecological values. The sciences that benefit from their availability include:

- ecology
- zoology
- botany
- geology
- taxonomy
- genetics
- soil-science
- agriculture
- forestry
- wildlife management
- hydrology
- aquatic biology
- limnology

[20] Illinois Nature Preserves Commission, *Comprehensive Plan for the Illinois Nature Preserves System: Part 1 Guidelines* (Rockford, Illinois, 1972), p. 3.

Pollution studies, population control, human ecology, forest productivity, and soil sciences all need better baseline information on natural processes; such data are vital to measuring man's impact on his environment, and the effect of that impact on plants, animals, and on man himself. Natural areas provide opportunities to collect such data on a continuing basis. They serve, also, as natural "early warning" systems against environmental deterioration.

As living museums of natural history, these areas contribute insights to local history, human geography, art education, conservation studies, and other learning experiences that can be enriched by association with an unflawed natural setting.

Sadly, the need for natural areas to preserve essential habitat for rare and endangered species is increasing. As the Commonwealth becomes more developed, the preservation of relic communities and reserves of breeding stock will be of increasing importance.

Natural Area Criteria

To qualify as a natural area, sites should:

- preserve biotic communities typical of the original natural history of a region or ecosystem;
- remain essentially stable and unlikely to undergo rapid change (transitional vegetative types ordinarily do not qualify, except for the purpose of studying natural succession);
- be in natural or near natural condition, without obvious recent disturbances that would impair their value;
- contain ecosystems as yet incompletely represented in existing natural areas of Pennsylvania;
- provide habitat for endangered, threatened or vanishing species;
- contain significant or unique relic species;
- display a concentration of organisms, or great diversity of life;
- serve as outdoor research laboratories.

Areas that qualify under one or more of these criteria may be ranked according to the following factors:

1. *Quality* — diversity, lack of disturbance, integrity;
2. *Degree of Commonness* — amount of community type already protected, and remaining;

3. *Threat* — all factors that could contribute to encroachment or destruction;
4. *Use-Value* — accessibility, adaptability to use;
5. *Size, including buffer zone;*
6. *Availability* — cost, complexity of ownership.

Application of these six factors will permit assigning comparative numerical values to potential sites. They also provide a means for ensuring a natural areas system that is complete and representative, and are useful where it is necessary to justify choices in court proceedings.

Natural Areas in Pennsylvania

The number of sites that may qualify as natural areas in Pennsylvania is not known. The most recent inventory, prepared by the Western Pennsylvania Conservancy, lists 584 sites. Many will be destroyed before action to protect them can be taken.

Bear Meadows Natural Area — Centre County, Pa.

Yet Pennsylvania has made good progress in natural areas protection. A preliminary list of Pennsylvania natural areas discloses that:

- 120 natural areas from one to over 5,000 acres in size have been protected;
- forest vegetation is the primary feature preserved;
- bog and aquatic communities are well represented in the glaciated northwest region;
- no sites have been established for rare or endangered mammals, fish, reptiles, or insects.
- four ecosystems are under-represented: shale and serpentine barrens (the State's most endangered habitats), and pine-oak and beech-maple forests.

Recommendations

1. The first need is to link up the many public and private efforts to preserve natural areas — to identify potential sites, fill obvious gaps, and create a comprehensive program for administration and operation of a state-wide system.
2. State leadership will be vital to the success of such an effort. A special division of DER should be responsible for coordinating natural areas on State lands, and for various permit and management decisions.
3. A natural areas commission, appointed by the Governor, should be created. Its functions would include:
   - coordinating public and private efforts;
   - operating a clearinghouse of natural areas data and information;
   - maintaining natural area inventories;
   - raising funds for acquisition and operation of natural areas;
   - stimulating and coordinating additional inventory and baseline research.
4. The State Game Commission and the Fish Commission should be encouraged to adopt explicit policies for permanent natural area protection. Both agencies are now doing creditable management jobs, but have no official policies or programs for designating natural areas, and assuring that their protection will be continued.
5. Consideration should be given to enactment of a Pennsylvania natural heritage act, similar to the natural area statutes that have been adopted in Indiana, Ohio, and Illinois. Such legislation would promote a permanent natural areas system for the Commonwealth.

III. HISTORIC, CULTURAL, AND ARCHAEOLOGICAL SITES

Pennsylvania, the Bicentennial State, has an especially rich heritage. In a recent survey by the National Park Service, it ranked third (after Massachusetts and New York) in the Nation in the number of historic and cultural areas eligible for registration as national landmarks. Yet a major portion of the State's historic and cultural places and structures remain unrecognized, improperly cared for, or threatened by incompatible use or development. A survey of six historic structures that have fallen to the wrecker's ball suggests that such losses are due largely to:[21]

- absence of State legislation to protect historic structures;
- failure of well meaning but poorly organized citizen groups to launch timely, effective preservation campaigns; eleventh hour campaigns often are too late;
- inability of the Pennsylvania Historical and Museum Commission to stay abreast of situations where historic structures are endangered.

Two examples illustrate the consequences of such weaknesses:

The Nonnemaker House in Allentown, Lehigh County, was a two and one-half story, limestone structure constructed in the Georgian style. Except for a few Victorian additions, the original interior and exterior of the house were intact. The property was included on both the Pennsylvania and National Registers.

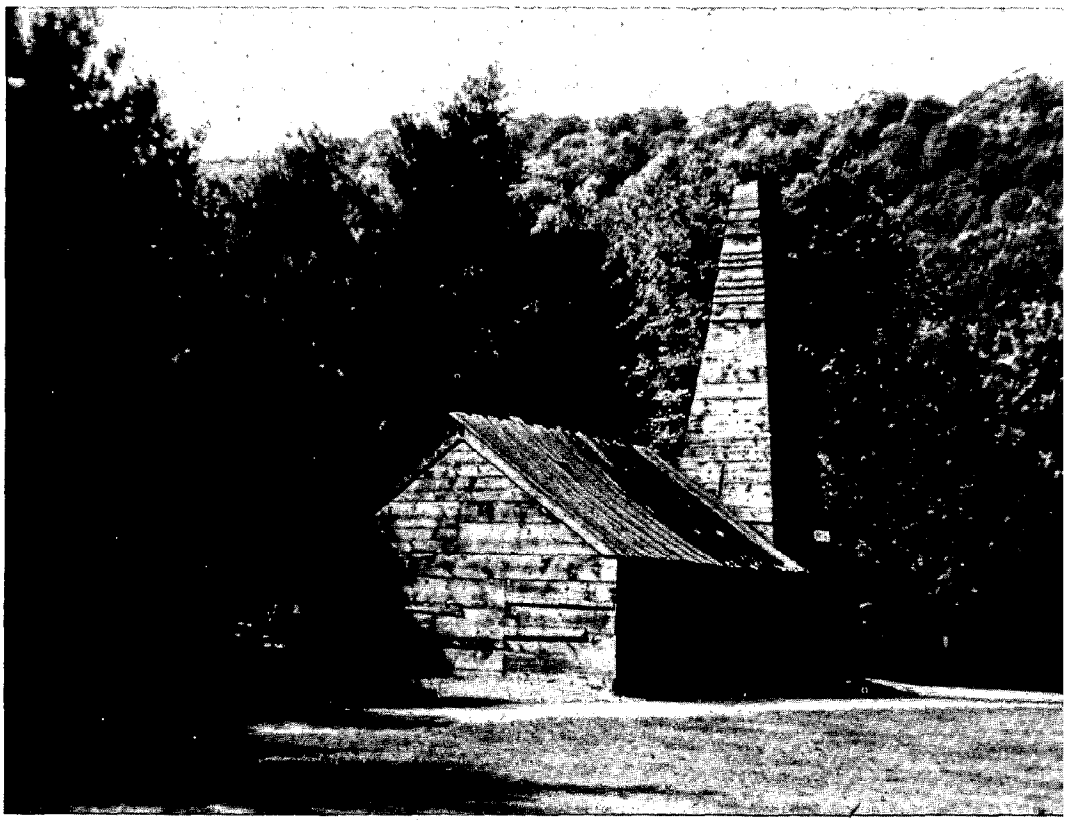
The building was slated for demolition as part of a HUD redevelopment project. In spite of State and national recognition, efforts to develop alternative plans and attempts to arrange for restoration of the property failed. This splendid example of Georgian architecture was destroyed in February, 1973.

Old Main was a four story Serpentine stone structure, constructed in the Mansard style in 1870-71. This building too, was included on both the Pennsylvania and National Registers.

In 1971 a demolition contract was awarded to raze Old Main as part of an expansion of West Chester College.

An eleventh hour effort was launched to save the property, but in spite of numerous appeals involving the Historical and Museum Commission and Governor Shapp, the college stood firm on its argument that preservation would be too costly, and the building was demolished.

[21] William Watson, Director of Historic Sites Survey, Pennsylvania Historical and Museum Commission. (Harrisburg, Pa.), Letter, October, 1974.



Re-creation of the nation's first oil well — Titusville, Pa.

Justifying Historic Preservation

As with other critical environmental areas, the struggle to preserve historic sites and buildings often pits popular notions of progress and profits against intangible values that are far more difficult to measure. Historic areas do have measurable benefits, however. They can:

- function as recreation areas;
- attract tourist and other business;
- serve as important educational resources;
- contribute to a range of scientific endeavors; and
- be rehabilitated to meet a variety of new uses.

But their full value is incalculably greater than the sum of all of these; indeed, an appreciation of the past is one measure of how far any society has advanced.

National Programs

A number of Federal programs provide important support to state and local preservation efforts:

- *Grants-in-aid* for surveys, planning, acquisition, restoration, and development are administered by the National Park Service under the provisions of the National Historic Preservation Act of 1966. From its inception to November 30, 1973, awards to Pennsylvania totalled $342,229.71. Unfortunately, the program suffers from chronic under-funding; the states have indicated their willingness to match four times the Federal amounts that have been appropriated in recent years.
- *The National Historic Landmarks Program*[22] registers "historic places judged to have exceptional value to the Nation as a whole rather than to a particular state or locality." Pennsylvania's importance in the Nation's history is attested to by the fact that 59 historic landmarks have been registered in the Commonwealth.
- *The National Register of Historic Plans*[23] publishes a list of "distinctive sites, buildings, structures, and objects significant in American history, architecture, archeology, and culture — a protective inventory of irreplaceable resources . . ." National landmarks are automatically included on the Register, which also includes properties of state or local significance nominated by the state and approved by the National Park Service.
- *The Historic American Building Survey* catalogues buildings of architectural merit and historic association, and preserves drawings, plans, photographs, and other documentation of them in a permanent national architectural archive. The Historic American Engineering Record performs a similar function for engineering works, structures, and systems.
- *The National Park Service Archeological Program* is an effort to recover and protect archeological remains. The program includes salvaging knowledge and evidence from areas before they are flooded by Federal impoundments; preserving ruins, earthworks, and building foundations revealed by archeology; and publishing archeological information.

At the State level, the Pennsylvania Historical and Museum Commission is the official agency for historic and archeological preservation. Its Executive Director is also the State Historic Preservation Officer. Unfortunately, the Commission has been hampered by lack of authority,

[22] National Park Service, U. S. Department of the Interior, *The National Historic Landmarks Program* (Washington, D.C.: U. S. Government Printing Office, 1970).

[23] National Park Service, U. S. Department of the Interior, *The National Register of Historic Places* (Washington, D. C.: U. S. Government Printing Office, 1971).

funds, and manpower. Several State agencies, notably PennDot, DCA, and DER also are actively interested in historic preservation.

Public and private organizations at regional, county, and community levels are the mainstay of historic preservation in Pennsylvania. Often they are ably organized, reasonably well-financed, and have available the services of accomplished historians and architects. What is lacking is a more uniform level of effort across the State, and better communication and coordination among numerous individual organizations.

Recommendations

1. The Pennsylvania Historical and Museum Commission should be clothed with explicit authority to acquire, restore, maintain, or preserve historic sites and areas. Legislation for this purpose also should recognize the Pennsylvania Inventory of Historic Places.
2. State legislation should require a six month stay of destruction for any designated historic site or building. Opportunities for preservation could be fully explored during this period.
3. A comprehensive State historic preservation effort, along lines suggested by the Advisory Council on Historic Preservation, should be adopted as the basis for a better-organized, state-wide historic preservation program.[24]
4. Some areas of the State have not had the resources or interest to undertake historic preservation programs. These counties and communities should be encouraged to seek out and honor examples of Pennsylvania architecture, history, and achievements in their regions. Rural sites, in particular, are often overlooked; their identification and preservation could contribute much to the charm of rural communities, and the pride of those who live there. A state-supported effort to help each county identify and maintain at least a few of these areas as part of the county land use program (see Part Five — I) is strongly recommended.

IV. WETLANDS AND COASTAL AREAS

Pennsylvania has an estimated 68,835 acres of coastal and inland wetlands, and freshwater, salt, and brackish marshes. The freshwater wetlands are concentrated in the glaciated northeastern and northwestern portions of the State; the coastal zones are a 52-mile shoreline along Lake Erie, and the Lower Delaware Coastal Zone, a 44-mile stretch with Philadelphia at its center.

[24] Advisory Council on Historic Preservation, *Guidelines for State Historic Preservation Legislation* (Washington, D. C., 1972), pp. 12-16.

Values and Pressures

Wetlands — defined as areas where the water table regularly stands at or above the surface of the land for at least a part of the year — perform important hydrological and other natural functions:

- as sumps and drainage basins that control and release water, stabilizing runoff and aiding flood control;
- as aquifer recharge areas that transmit and store water;
- as decontaminators and purifiers;
- as rich sources of food in rivers, bays, and estuaries that are the nurseries of commercial, sport, and shellfish;
- as habitats for a wide variety of plant and animal life.

Like other critical environmental areas, the values of wetlands tend to be indirect, and difficult to quantify. By contrast, their economic worth as development sites, and for other purposes, is measurable and substantial. The outcome of such contests seems inevitable. Thus on the Lower Delaware, Tinicum Marsh, the surviving remnant of habitat still suitable for migratory waterfowl and other wildlife, is sandwiched between Philadelphia International Airport, Interstate Route 95, oil refineries, storage tanks, and solid waste disposal areas. In many communities, wetlands are favored sites for dumping construction refuse and disposing of solid wastes.

Public Regulation of Wetlands

Federal, state, regional, and local governments are all involved in wetlands planning, regulation, and use. So are many private interests: developers, recreationists, hunters and fishermen, heavy industry, maritime, and others. Given their value for so many and such varied purposes, it is not surprising that wetlands were early entrants in conflicts between environmental and economic interests. Thus, wetlands were the subjects of landmark legal battles to test when regulation was so severe as to constitute takings requiring compensation. Several cases have supported the propriety of public regulations to protect their environmental values (see supplementary legal study). Yet each year the acreage of remaining wetlands shrinks. Public programs to protect them seem ineffective. As one expert put it "... there is no Federal wetlands program. What is operating is a patched together, gum-and-hairpin sort of operation made up of various partial authorities ..." [25]

[25] Clark, John, "The Wetlands: How Well Are They Protected", *Conservation Foundation Letter*, September, 1974.

Coastal states are now moving to protect their wetlands. Massachusetts and Wisconsin have launched effective programs. Delaware has outlawed new heavy industrial development, and regulates all development on the coast. New York has established a moratorium that can be broken only in cases of undue hardship. California's Coastal Commission is perhaps the best known, regulating development within 1000 feet of the shore and requiring planning for a much deeper coastal band.

Wetlands Regulation in Pennsylvania

Ten local governments exercise authority over the Erie coastal zone. Nearly twice as many have jurisdiction over the lower Delaware, where several commissions also have special responsibilities. In addition, Federal agencies are involved if navigation (Corps of Engineers), pollution (EPA), commercial fishing (Department of Commerce), or migratory waterfowl (Department of the Interior) are at issue.

The Coastal Zone Management Act of 1972 provides funds to coastal states for developing programs to coordinate the management of their coastal zones. The Bureau of Resources Programming, DER, has embarked on such a program for Pennsylvania.

Recommendations

1. Preparation of a unified coastal zone and wetlands program for the Commonwealth should go forward within the framework of the comprehensive land use program proposed in this report.
2. Wetlands management in the Commonwealth should reflect an understanding that wetlands and coastal lands are, by definition, critical environmental areas. Where environmental balances have not been impaired beyond salvage, restoration and protection should be the goal. Where wetlands are already being protected — and happily the Commonwealth has been far-sighted in acquiring such lands — vigilance should be exercised to see that such protection continues.
3. Under the Federal Act, states need to define permitted uses and specify how they propose to exert control over such uses. A number of alternatives have been employed. Those states that have attempted to control wetland use through state permit systems have had difficulties. On the other hand, programs that placed primary initiative and authority in local government, as in Wisconsin, appear to work well. For example, an ordinance enacted by Marinette County under the Wisconsin law successfully withstood the "takings" test (see Just v. Marinette County, supplementary legal

study). Thus, county enforcement of State guidelines, as recommended elsewhere in this report, seems likely to withstand court tests, in addition to being well-suited to the traditions of the Commonwealth.

4. A few major wetlands that are important as migratory waterfowl habitat are still unprotected. It is recommended that the State acquire these, or otherwise see to their protection.

5. Numerous smaller bogs, marshes, and swamps also merit protection. The appropriate jurisdiction — ordinarily, the county — should be encouraged to adopt protective ordinances for such areas as part of their floodplain management programs.

Part IV

Growth: How Much, What Kind and Where

"I have lay'd out the Province into Countys, Six are begun to be seated, they lye on the Great River and are planted about 6 miles back . . ."

— letter from William Penn to the Earl of Sunderland, 1683

PART FOUR – GROWTH: HOW MUCH, WHAT KIND, AND WHERE

Overview

Until recently, growth of nearly any kind was welcomed: growth meant jobs, tax revenue, progress, and profits. Lack of growth signalled stagnation, hard times, and less chance for individual or community betterment.

This view is changing. Concerns over pollution, congestion, and "quality of life" opportunities now challenge the "bigger – better – busier" view. Some communities have tried to block growth, pleading environmental damage as their defense. The indirect costs and side-effects of growth are of more concern, too:

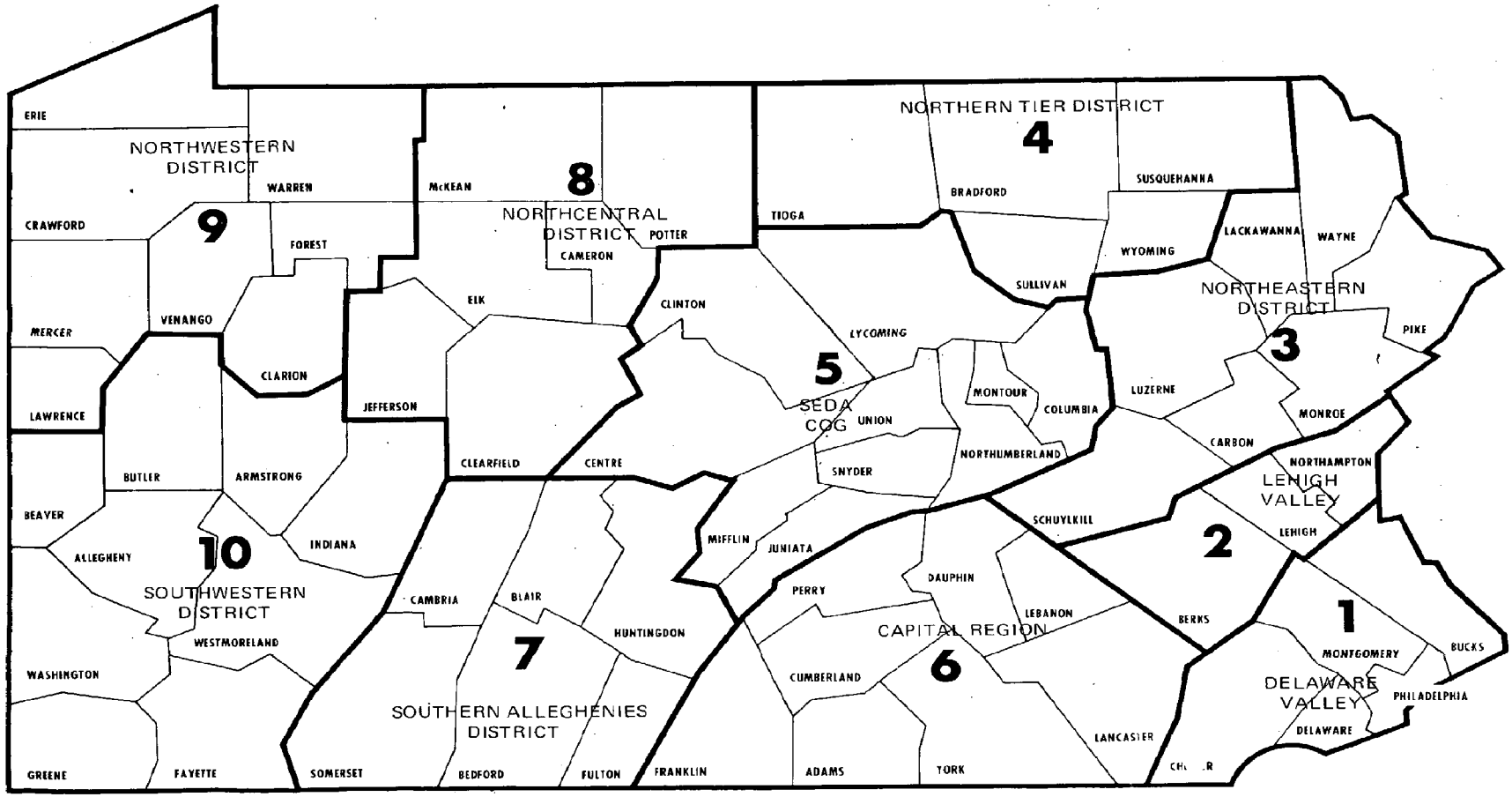
- few coastal states want deepwater ports;
- few localities want nuclear power plants;
- few communities want more solid waste sites;
- few school districts want more children;
- few suburbs want more low income housing.

Yet growth is necessary, and facilities must go someplace.

Pennsylvania's diversity – a strength in so many ways – will make the task of locating growth more difficult. Views on growth vary by region, community, and interest group; for every view, a counter-view can be expected. But most would agree that the Commonwealth should have a growth strategy, and that it should assist in:

- controlling large-scale developments of regional impact, and locating sites for key public facilities;
- guiding growth around areas unsuited to development (floodplains, steep slopes, agricultural lands, areas of critical environmental concern);
- attracting desirable growth which can build on existing community resources;
- providing adequate housing, especially for low and moderate income levels;
- improving and diversifying transportation systems; and
- assuring recreational opportunities and urban open space.

UNIFORM REGIONS



Realizing these objectives will be a stiff test for the Commonwealth, particularly in a time of economic uncertainty. An effective State land use program can help.

Growth in Pennsylvania

It seems clear that the predicted 16% population increase — 2 million more people in Pennsylvania by 1990[26] — will not come about. There will be growth, but as in the period since World War II, it will be comparatively slow and uneven.

This history of modest growth has had its value; much of Pennsylvania has escaped the over-expansion and leap-frogging urban sprawl experienced elsewhere in the Nation. There are still opportunities for the Commonwealth to choose its future course.

In other ways, lack of growth has been hurtful, and declining areas have been hard-pressed:

- with little growth, any new development was welcome; planning was ignored, and control ordinances not enforced;
- loss of tax revenue forced severe cuts in public service;
- lack of opportunity forced the young, productive, and energetic to look elsewhere for their future;
- housing stocks have deteriorated, and new starts have not kept pace with housing needs.

These conditions were particularly prevalent in the Southern Alleghenies and North Central regions (#7 & 8) in the decade 1961-70 (see map of uniform regions). The Philadelphia and Capital regions (#1 & 6), on the other hand, grew quite rapidly. Most of the rest of the State gained only moderately, if at all.[27] Five of the 13 Standard Metropolitan Statistical Areas (SMSA) declined: Pittsburgh was the only SMSA of its size in the Nation that lost population during the period.[28]

[26] Office of State Planning and Development, *Pennsylvania Projection Series: Population and Labor Force* (Harrisburg, Pennsylvania: November, 1973), p. 8.

[27] Office of State Planning and Development, *The Population of Pennsylvania, op. cit.* p. 8.

[28] "Population Inside and Outside of Central Cities of SMSA's: 1950-1970," *U. S. Census of Population: United States Summary* (Washington, D. C.: 1973), Table 34.

The Outlook

One thing is certain: there will be growth. Even if fertility rates stay at current low levels, it will be 70 years before the Nation's population growth ceases.[29] Moreover, the number of households is increasing more sharply than the population: between now and 1985 it is estimated that 27,000 new households will be formed in the United States each week.[30]

Based on past trends, two-thirds of this increase will settle in the suburbs. But this pattern may be changing: recent figures show a modest reverse flow back to the countryside. Hopefully, big cities, too, will attract a larger cross-section of the population. High energy costs may trigger such a move.

Wherever located, both the quantity and quality of growth is of concern. The State will need more housing, electricity, roads, and industry. But we will have to live with this new development a long time, and Pennsylvanians have a right to insist that it be attractive as well as functional, environmentally sound as well as economically efficient.

Control of Growth

Most growth takes one of two forms:

- projects or growth-inducing activities of such size, location, or character that they are of regional or state-wide significance, such as key facilities and regional developments;
- more generalized or smaller scale development that is principally a local concern.

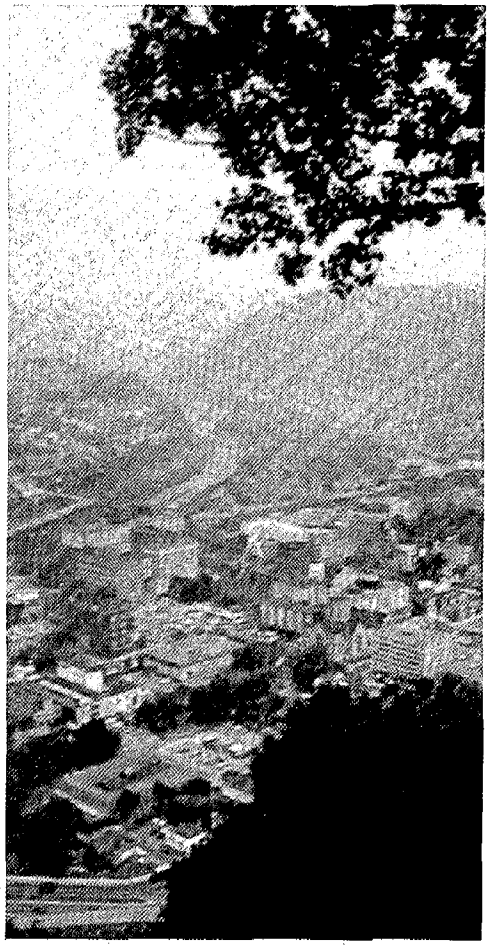
Probably 90% of all land use and development decisions fall into the latter category. This kind of growth activity traditionally has been regulated by local government in Pennsylvania, and it is recommended that this be continued, with certain improvements in local land use planning and regulation. (See Part Five.)

Relatively few growth activities are of regional or state-wide significance. However, decisions on this minor fraction can be decisive in channelling growth toward or away from areas; determining the kind of development

[29] Commission on Population Growth and the American Future, *Population and the American Future* (New York: Signet, March 1972), p. 15.

[30] William E. Reilly, ed., *The Use of the Land: A Citizens' Policy Guide to Urban Growth* (New York: Thomas Y. Crowell, Co., 1973), p. 79.

The mountains and river valleys have helped shape Pennsylvania's growth.

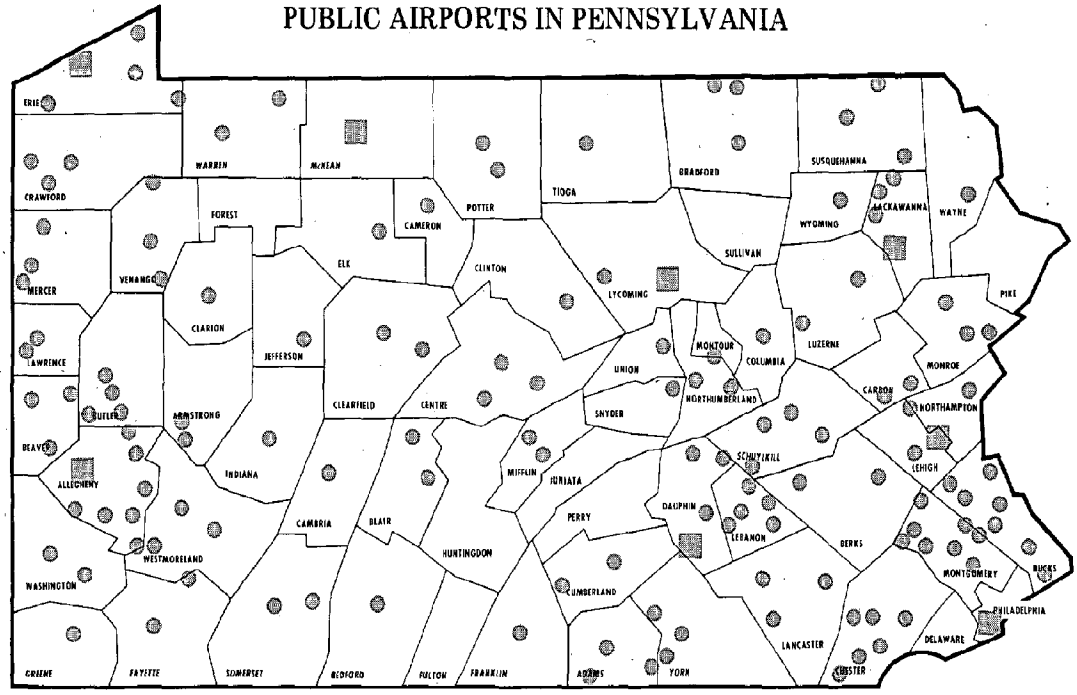


that will occur; and influencing the velocity of development activities. The national land use legislation now under consideration by the Congress proposes that states guide growth of this kind. A brief consideration of what this involves in Pennsylvania is an appropriate way to introduce a discussion of Commonwealth growth needs and policies.

I. KEY FACILITIES

Key facilities are public facilities which induce development of more than local impact, or create high user demands that affect broad areas. Examples include larger airports, interstate highway system interchanges, public utilities, and large institutions, such as hospitals and universities. These facilities always exert a substantial impact on land use within their region. If located after an area has been developed, they can impact existing uses, and cause land use conflicts. If located prior to other development, they tend to attract growth, acting as "keys" to opening up areas for development.

PUBLIC AIRPORTS IN PENNSYLVANIA



DATA SOURCE: PennDot, Transportation Policies For Pennsylvania, 1970.

KEY: (■) Airline Service
(●) General Service

Airports

The noise impact zones and approach patterns of the 162 commercial airports in the State clearly limit how the lands beneath them can be used. More important, major airports attract employment and industry that may dominate the economy and land use of the area. In the case of the proposed Florida jetport, it was these secondary consequences that were of gravest concern. Opponents pointed out that the jetport would attract a community of up to 50,000, with damaging results to water quality and recharge, air pollution, and existing land uses.

Air travel facilities are widely distributed throughout the State: 60 counties have at least one commercial airport, and many have seven or eight. Bucks County has some 40 public and private airports.[31] Yet in locating these facilities, little regard is usually paid to their effect on other land uses.

[31] Bureau of Statistics, Research and Planning, *Pennsylvania Abstract 1973* (Harrisburg, Pennsylvania: Pennsylvania Department of Commerce, 1973, 15th edition), Table 260, p. 341.

Highways

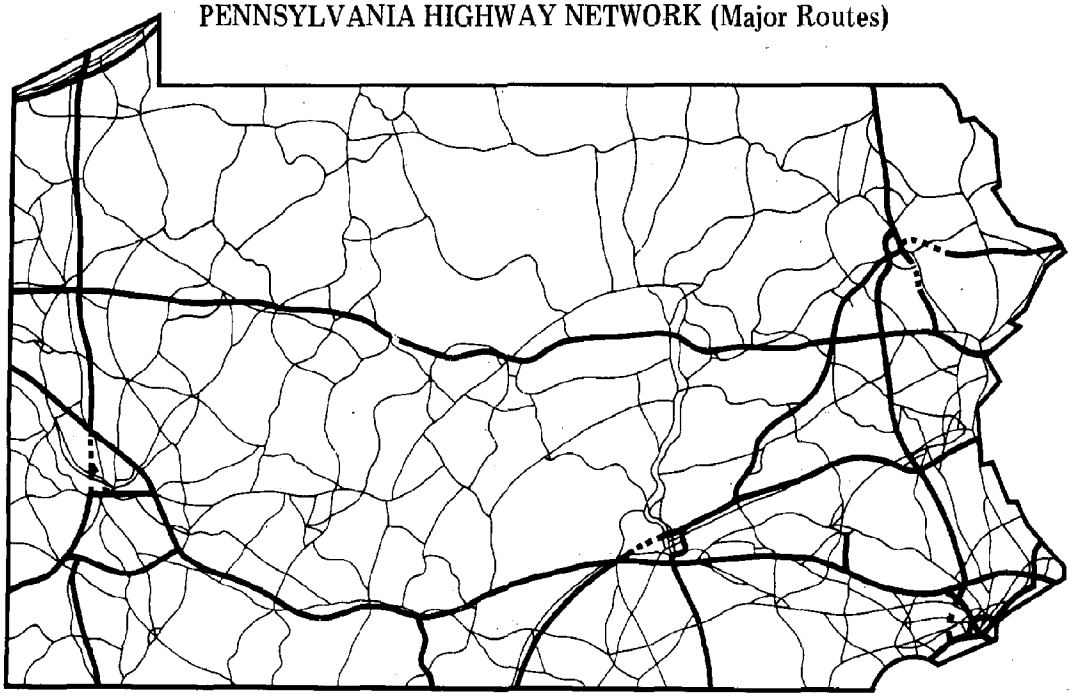
Major arterial highways also are key growth determinants. As with airports, they occupy a substantial acreage — a linear mile of highway may require up to 60 acres, and a clover leaf interchange double that amount. But their indirect and secondary effects are even more important. For example, the major arterial system in Pennsylvania consists of only 12,000 miles, or 11 percent of all road and street mileage in the State; yet it handles nearly 60 percent of all daily traffic. Moreover, it links up all major urban areas, and all important sources of rural traffic.[32]

Where such highways are located is a major key to regional growth: Interstate Route 80 opened up nearly a third of the State. Access to them from surrounding areas — highway interchanges — pinpoints the location and character of development. Thus, older highways in Pennsylvania typically have led to long, narrow strips of urban development due to uncontrolled access. New, limited access highways generate pressures for development at the interchanges.

How highways are aligned and constructed often has important environmental and land use implications. For example, the plan to rebuild Route 219, a major north-south link, has resulted in widespread opposition to what many believe is the needless taking of prime agricultural land.

[32] PennDot, *2000 Interim Highway Plan* (Harrisburg, Pa.: Pennsylvania Department of Transportation), p. 3.

PENNSYLVANIA HIGHWAY NETWORK (Major Routes)



INTERSTATE ROUTES
U.S. and PENNSYLVANIA ROUTES

DATA SOURCE: PennDot, *Transportation Policies For Pennsylvania*, 1970.

Railroads

The proposed national land use legislation classifies railroad passenger terminals as key facilities. While few new passenger terminals are in prospect, the effect of proposed railroad line abandonments in Pennsylvania has obvious development implications. On the positive side, some of these lines have great potential for hiking, biking, and other park and recreational uses. More often, the loss of service will further disadvantage regions already economically depressed, and lock them into even greater dependency on truck transport.

Major Institutions

New or expanded hospitals, college and university facilities, and similar public institutions have a high impact on an area; the rapid growth at State College is a dramatic example. Their potential for influencing regional development and land use warrants State planning and oversight in determining their location.

Public Utilities

It has been remarked that civilization follows sewers. In turn, sewers hook up to sewage treatment plants. Where such plants are located, and when they are constructed largely determines the timing and location of new urban growth. The availability of public water supplies has a similar impact. These facilities affect both the rate of growth and the environmental quality of the area in question. The recent ruling in the Fox case (see supplementary legal study) underscores the key role that placement of utilities plays in regional development.

Electric Utilities

While the State's population grew by only 4.2% from 1964-1974, Pennsylvania's use of electricity doubled. The Pennsylvania Electrical Association's projections indicate a further increase in demand for electricity of 80% by 1984. Peak load is forecast to nearly triple by 1990.[33]

Higher prices and recent emphasis on conservation may result in a downward revision of these projections. Nevertheless, power companies expect to build two new nuclear power plants and one new fossil-fueled plant to meet demand. In addition, expansions are planned for one nuclear facility and three fossil-fueled plants.

[33] Pennsylvania Power and Light Company, *Forecasted Winter Peak Loads: Capacity and Reserves* (Allentown, Pa.: 1974).

Yet Pennsylvania still lacks a comprehensive program for siting and monitoring power-generating stations, such as nuclear power plants. Also, recent hearings concerning alleged radiation leaks from the Shippingport Nuclear Station suggest that little attention has been paid to community attitudes in locating these facilities.[34]

A new approach to power generation may help reduce requirements for new land fill sites, another key land use concern. The city of Pittsburgh recently unveiled a plan to incinerate solid waste, and use the resulting energy to develop electrical power. Although the operation will supply only about 2% of the electricity needed by the area, it provides an environmentally sound solid waste program at a cost competitive with alternatives, as well as the added benefit of power production.[35]

It has been suggested that, in the future, Pennsylvania may generate and distribute sufficient power to supply adjoining states with a substantial portion of their power needs (see supplementary economic study). This prospect makes careful siting of such facilities — always important — even more vital to the future of major areas of the Commonwealth.

II. LARGE-SCALE DEVELOPMENT

Large-scale developments are private undertakings which, because of their size, produce major land use impacts felt beyond local boundaries. They include major subdivisions, regional shopping malls, industrial parks, recreation-resort complexes, and the like.

Whether a development is "large-scale" depends on both the size of the facility, and the size of the community in which it will be located. Factors to be considered include:

- amount of traffic generated;
- number of people likely to be present;
- potential for creating environmental problems, such as air, water or noise pollution;
- size of the site to be occupied; and
- likelihood that additional development will be generated.

[34] Governor's Fact Finding Committee, *Shippingport Nuclear Power Station: Alleged Health Effects* (Harrisburg, Pa.: 1974), p. 2.

[35] Mike Moyle, "Trash Power," *Pittsburgh Post-Gazette* (Pittsburgh, Pa.), October 23, 1974.

Housing is a special concern. While large residential sub-divisions are not uncommon, most housing is constructed by small or medium-sized firms that build a few units at a time. Yet taken altogether, housing is the major social and environmental impact in an area. Whether it leads or follows other kinds of development, housing clearly sets the growth and land use patterns of a region.

As this is written, housing starts nation-wide are down nearly 50%. High interest rates, soaring material costs, and increased unemployment have raised housing prices beyond the reach of most. Mobile homes are now the only housing within reach of most low and moderate income families, and constitute nine-tenths of all new low-cost single-family units in Pennsylvania.[36] (In Pittsburgh, the average price of new single-family houses for the last quarter of 1974 was $36,000 — an 18% increase over the previous year.)

Apartments and condominiums are a solution for some; in future, denser residential communities seem likely. But whether single family or multi-unit, sale or rental, it is clear that a great deal of new housing is needed, and that when the economy permits, a near-boom in housing can be expected.

The Commonwealth and its communities should be prepared to meet housing needs in ways that are economically efficient and environmentally sound. Building homes in poorly protected floodplains, or on steep slopes, is unwise from either standpoint. Nor should it be necessary to locate housing on prime agricultural lands. Guiding growth away from such areas, and providing an ample supply of satisfactory alternate sites, is a major function of state and local land use plans and programs.

III. OTHER MAJOR DEVELOPMENT

Under the Federal land use bill, states would be required to assume responsibility for guiding two other kinds of growth:

Developments of Regional Benefit — Some growth is prized by communities: high-income housing that produces substantial tax income, but few school-age children, for example. Other development is shunned: low-income housing, polluting industry, and sewage treatment plants.

[36] Vince Gagetta, "Mobile Homes Lead Low-Cost Housing Starts Across the State," *Pittsburgh Post-Gazette* (Pittsburgh, Pa.), October 14, 1974.

A broader view than that of the local community is required if growth that is necessary, but unwanted, is to be shared equitably. The state is the logical point of decision in such instances. Thus, in Massachusetts, the State may require communities to provide their share of low-income housing sites.[37]

New Towns — In Europe, new towns have been publicly-planned and funded; in the United States they have been private ventures, receiving only modest and indirect financial support from the national government. This distinction largely explains the disappointing record of new towns in the United States. The large amounts of capital required at the outset, with repayment and profits years away, and the difficulty of assembling large tracts of suitable land, have been too much to overcome.

New towns (or new communities as they are called in the Federal law) are defined as any of four kinds of urban development:

1. Free-standing communities that incorporate a balance of facilities for employment, recreation, commerce, residential, and related needs;
2. Satellites — economically balanced communities that provide an alternative to conventional suburbs;
3. Growth centers — small cities or towns that demonstrate a capacity for becoming major centers of urban and economic activity;
4. New towns-in-towns — large-scale renewal of the central city and adjoining areas, providing a balance of economic, housing, recreational, and cultural opportunities.

A report of the Pennsylvania State Planning Board in 1971 suggested that new towns had the potential for providing investment opportunities, jobs, curbing sprawl, and developing more satisfying patterns of community living.[38] A separate survey identified 56 sites. To date, none of these has been fully developed as a new community, and high interest rates and construction costs, and a depressed housing market, make new town prospects bleak.

The growth center concept may have utility in areas of Pennsylvania, such as along the Interstate 80 corridor. New towns-in-town also are a

[37] Massachusetts Zoning Appeals Law, 40B Mass. Gen. Laws Ann. Sec. 20-23 (Supp. 1971).

[38] Pennsylvania State Planning Board, *Pennsylvania New Community Site Survey* (Harrisburg, Pennsylvania: May, 1971), p. 1.

promising approach for dealing with central city decay. But there seems little need or prospect for a free-standing new community; the capital and energies required would seem better spent on less ambitious and costly kinds of new communities.

IV. URBAN REDEVELOPMENT: THE OTHER SIDE OF THE COIN

The land use problems of central cities have not been dealt with in this report; study constraints would have permitted only superficial treatment of a subject deserving full attention. Nor would the proposed Federal land use legislation require the states to give explicit consideration to land use problems of their urban areas. But a land use strategy for the Commonwealth will be incomplete until action-oriented recommendations for dealing with the needs of Pennsylvania's cities are made a part of it.

Redevelopment of central cities goes beyond guiding growth, building housing, or constructing new facilities — although these are important components. It requires, as well, insight, commitment, and funds to treat the root causes of decline and decay.

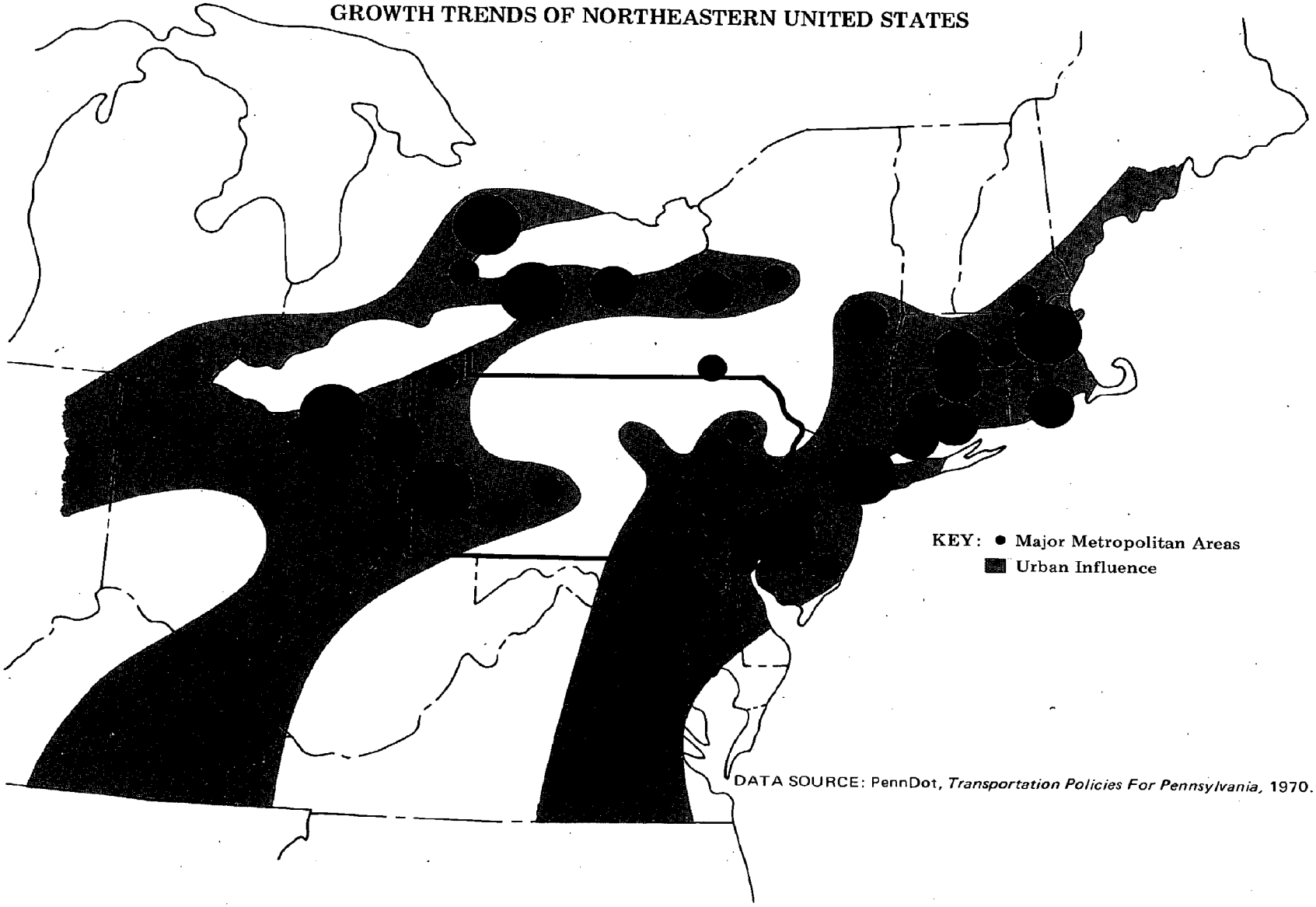
Where cities are unsafe, uncomfortable, congested, and lacking in public services and amenities, the exodus to the suburbs, and beyond, will continue. Restore them to attractive, efficient, stimulating places in which to live, work, and play, and pressures for more sprawl will be reduced — and much inefficient and environmentally damaging land use avoided.

V. GUIDING GROWTH: THE STATE ROLE

How should the Commonwealth guide growth of more than local concern? In fact, it is doing a great deal already. For example, existing State laws relate to planning, control, or development of:

- scenic rivers
- surface mining
- air pollution
- coal mine subsidence
- farm and forest land tax assessment
- clean streams
- coal refuse disposal
- site development
- open space acquisition
- atomic energy and radiation control
- soil conservation
- industrial development

GROWTH TRENDS OF NORTHEASTERN UNITED STATES



DATA SOURCE: PennDot, *Transportation Policies For Pennsylvania,* 1970.

The policies, regulations, and procedures for this set of responsibilities add up to a land use policy, of sorts. But, except in the most general sense, it is a policy without central purpose or sense of direction.

Improving the Process

In defense of present arrangements, it should be pointed out that they were never intended as a basis for a Commonwealth land use program. Moreover, they provide a better point of beginning for state oversight of major growth activities than is available in many states. To build on this beginning, four actions are recommended:

1. *Define growth of more than local significance.*
   Of the various definitions and standards that have been employed to identify key facilities and major development, those prepared by Florida, and used in that state's program, are the most complete and thorough (see appendix C). With minor modifications — particularly numerical standards that provide more effective control — they should meet the Commonwealth's needs.

2. *Adopt uniform standards and requirements.*
   Criteria and standards now used by State agencies in reviewing permit applications vary widely. Some variations are due to legislative requirements. Many are simply matters of custom and convenience.

   Standard forms, definitions, and common criteria would be a boon to all interests. They should be developed by a task force representative of all State agencies, and used consistently in State regulation of growth activities of more than local concern.

3. *Initiate simple, consistent, swift, and thorough review processes and appeals procedures.*
   It is proposed that:

   - permit applications for growth of regional or state-wide concern (see 1, above) be filed directly with counties;
   - applications be in the form of impact statements that describe short-term and long-range benefits and costs, and probable effects on related land use and development. (This approach is coming into general use at the Federal level, and in other states, and is approved by most Pennsylvanians (See Part Five - V).);

- counties review applications on the basis of State guidelines and requirements, and make decisions based on this review, and on the recommendations of the appropriate regional planning agency;
- copies of applications and decisions be sent to State agencies for their information, and for monitoring purposes. State agencies will be expected to conduct continuing and effective program audits of county performance;
- applicants and other affected parties not satisfied with county decisions have recourse to the State agency with original jurisdiction, to the Environmental Hearing Board, if appropriate, and to the courts.

4. *Conduct a continuing review of policies and procedures.*

The growth needs of the Commonwealth are dynamic; policies relating to them must not become frozen. The proposed Land Use Commission should conduct a regular review of State growth policies, taking into account the views of State, regional, and local agencies; affected interests; and the public at large. Recommendations for change should be forwarded to the Governor for his consideration.

VI. GUIDING GROWTH: THE LOCAL ROLE

The great majority of land use controls will continue to be exercised at the local level. They will largely determine what a locality looks like, how pleasant it is to live in, and how stable its economy is likely to be.

There is striking variation in how Pennsylvania's counties and communities have approached land use regulation. A few have well-staffed, effective programs, and a full complement of ordinances. Others have barely begun the planning process, and exercise no real control over land use and development.

Most counties and municipalities rely on zoning or subdivision regulations as principal land use control measures; 13 counties and 1200 municipalities have enacted zoning ordinances, and 48 counties and 2100 communities have subdivision regulations.[39] Only a few local governments are considering more innovative measures, such as performance zoning and development rights transfers.

[39] Office of State Planning and Development, *Land Resources Policies and Programs* (Harrisburg, Pa., August 1972), p. 12.

What are the concerns?

Counties and communities face many of the same growth problems as those confronting the State and its regions. The scale is smaller, but the problems are often immediate, direct, and severe, and the resources for dealing with them limited. Of the many land use and development problems facing localities, four are particularly noteworthy:

1. *Growth/No-growth*

   While some communities struggle for more industry and tax revenues, others seek stability at present levels.

   The phenomenon of "no-growth" as an operating policy is recent. It is based on several factors:

   - a fear that additional growth will exceed environmental limits;
   - a concern that growth will jeopardize "quality of life" opportunities;
   - a desire to exclude low-income or minority groups.

   Communities have tried to limit growth by a number of devices. Petaluma, California, attempted to limit the number of new housing units that could be built annually. This limitation was struck down as an infringement of the Constitutional right to travel guaranteed by the First Amendment.

   In Ramapo, New York, growth was not banned, but required to conform to an approved plan for staging development of basic public facilities over an 18-year period. A capital improvements budget was approved to finance such construction, according to a schedule proposed in the plan. Developers who wished to build sooner could do so, providing they installed necessary public facilities, such as sewer and water.

   Civil rights interests, builders, and others, have denounced the Ramapo plan as a pretext for excluding new people and growth. In their view, staging growth over an 18-year period has nearly the same effect as prohibiting it altogether. Yet the Ramapo plan has withstood legal attack. The fact that the plan was tied to a capital improvements budget, and that an alternative was provided, was noted by the court with approval.

   As population rises and resources shrink, "no-growth" and "slow-growth" strategies can be expected to become more common in

Pennsylvania. Like the "last man in the lifeboat" parable, they raise difficult, fundamental questions. So long as there is a reasonable basis for limiting new growth, however, such plans may withstand legal attack; timed development now seems acceptable. In future, stability may replace growth as the objective of more Commonwealth communities.

2. *Spot and Strip Development*

Spot and strip development eat away at the countryside, leaving inefficient and unsightly pockets of settlement. Few country roads are without their share of scattered mobile homes or houses located where land was cheap, and building codes lax. Nor can people be blamed for meeting their housing needs in this way, which is often the only course available to them.

Strip commercial development is more a function of poor planning and unenforced regulation than cheap land. Quick food franchises, discount houses, drive-in theatres, and other roadside commerce can be controlled, if localities wish to do so. Pennsylvanians strongly support such action (see part Five-V).

For counties, in particular, both kinds of growth are a problem. Given the economic situation, many are reluctant to discourage land uses that produce tax revenue or jobs. Yet long-term public costs could be reduced, landscapes spared, and development made more stable if such growth were better managed. The means for guiding it include clustering housing, planned residential developments, location of water and sewer facilities, and so forth. Technical assistance can help improve the design and siting of mobile home parks, convenience shopping centers, and industrial miniparks.

Spot and strip development are difficult to cope with; they are part of a slow, uneven, development pattern that has become the accepted growth form in many areas. Counties confronted with such growth are often among the most poorly-equipped to deal with it. Yet the future of many Pennsylvania localities and landscapes depends on their response.

3. *The Local Regulatory Process*

Few public undertakings are as volatile and controversial as the regulation of local land uses. Planning boards, zoning commissions,

and others involved in the process are blamed for much, and praised for little:

- large lot zoning is held to be exclusionary;
- smaller, single-family lot sizes are held responsible for drab, cookie-cutter subdivisions, and high costs of public services;
- multi-family units are blamed for congestion and pollution.

Traditional zoning is often held responsible for these land use patterns and conflicts. In fact, zoning was never intended to carry the full burden of guiding development, and is bound to fail in the attempt.

The trend is toward a different approach. As described by William Reilly, President of the Conservation Foundation, the goal is to:[40]

> "Move away from the process of decision-making that depends upon pre-regulation or zoning, toward a process that is founded upon the consequence of development decisions and is not overly concerned with inflexible, detailed prescriptions. The American Law Institute's Draft Model Land Development Code provides specific examples of this approach."

Reilly also expressed the need to:

> ". . . recognize frankly that so long as the decision-making process is affected by (or even appears to be affected by) conflicts of interest on a large scale, there will be little prospect for implementing flexible review processes. For that, the public must trust the decision-makers. The property tax dependence and the lack of faith in the integrity of zoning and planning boards, elected local officials, etc., create a serious problem for those who wish to see quality development accepted by communities."

4. *Property Tax Policy*

Local property tax policy constitutes one of the most important influences on the pattern and velocity of local growth.

The problems associated with local tax policy are well-documented — inefficient use of land, decline of the central city, encouragement of sprawl, disincentives for improvement of buildings, and so forth. Moreover, meaningful relationships are rarely drawn between tax policy and land use planning and regulation; too often, economic pressures generated by the property tax system work at cross-purposes with planning and development objectives.

[40] William K. Reilly, letter to Howard Grossman, 1974.

A full treatment of the effect of the property tax on land use planning and regulation is beyond the scope of this report, but several major features should be noted:

- The property tax remains the dominant financing mechanism of local governments (nationally, over $47 billion in revenues generated in 1973). The rapid increase in expenditures for education and other local services has outmatched the resources of many communities, and created the need for supplementary financing mechanisms.
- The quality of property tax administration is uneven. Assessment is often inequitable and inaccurate. In many communities, assessment ratios vary significantly for different types of property (single-family homes generally being given lower assessment rates).
- Communities often exempt certain types of property from either part or all of the tax burden — for example, homestead exemptions, veterans' exemptions, and exemptions for the aged benefit particular classes of homeowners. Tax exemptions also are often granted to properties owned by government and religious, educational, and other non-profit organizations. While such exemptions reward worthy services and social benefits, they may also sharply narrow the tax base of a community.
- The fragmentation of local jurisdictions across the Nation has led to strong intergovernmental competition for tax dollars, with some communities faring better than others. Combined with varying assessment ratios and tax rates, the result is an unbalanced distribution of services across the country.
- As a generalization, the property tax is regressive and inequitable, placing heavier burdens on those least able to pay.

Solutions to these problems will require imaginative approaches and solid reform. Several strategies have already been advanced. In Minneapolis-St. Paul, a program was proposed for sharing new industry tax dollars among all communities in the region. Other tax innovations of interest include the "circuit breaker" system, by which states return a portion of an individual's tax, based on minimum income levels; various differential assessment programs advanced by states for preserving agricultural land; land banking; and land value taxation.

Recent court decisions cast into question the legality of the property tax to finance local education, in that it may not provide equality of educational opportunity for all residents. If upheld, these decisions could require a radical restructuring of state and local tax policy.

In view of the fundamental relationships between land use and property tax policy, it is recommended that the Commonwealth, in cooperation with local governments, undertake a full-scale review of the impacts of tax policy on land use planning and regulation. The product of such a study would be both information and recommendations to assist development of a more equitable and efficient system of local land taxation that would harmonize both State and local land use objectives.

VII. A GROWTH STRATEGY FOR THE COMMONWEALTH

Over much of the Commonwealth, growth is not the problem. Particularly in rural areas, downward economic spirals have forced severe cutbacks in public services — health, education, welfare, and others. The departure of the young and productive for opportunities elsewhere leaves an aging population in need of even more services, and a diminished tax base to supply them. The spiral deepens. Inevitably land and resources, as well as people, are affected. A pattern of life and landscape is set that is difficult to change.

Providing Relief

Better access to community facilities and public services would improve prospects for these areas. A permanent cure will be costly, and take time. As an interim measure, a Rural Council, comprised of local officials and assisted by State agencies, could coordinate delivery of certain public services through the sharing of mobile or portable community facilities among rural localities in need of them. Some services are already provided in this way — visiting nurses, bookmobiles, and x-ray units, for example. But coverage is spotty. Such needs as dental clinics, recreational equipment, legal aid, assistance in preparing tax forms — services taken for granted in metropolitan areas — are simply unavailable in many parts of the State. By sharing costs and coordinating services, rural regions could help redress this imbalance.

The pilot rural transportation program operated by the Department of Agriculture has proved its value; it should be expanded to additional areas, and the level of service increased. But the availability of this helpful service is not a substitute for access to a reasonable range of community facilities. A system of shared facilities, available on a "circuit rider" basis, could substantially improve the quality of life for many Pennsylvanians.

A New Direction

A Rural Council that coordinates the use and location of portable community facilities would provide helpful interim relief. Over the long haul, however, the Commonwealth and its communities should try to attract a larger share of more desirable economic activities. Thus far, most emphasis has been on conventional economic development assistance — roads, water and sewer systems, and so forth. These are important, but insufficient to meet keen nation-wide competition to attract such activities as:

- non-polluting light industry;
- marketing, distribution, and processing operations;
- research and development organizations;
- service-oriented businesses.

Many communities cannot hope to attract a share in this national growth market until they are more attractive places in which to live and raise families. Areas that have been able to provide schools, hospitals, community centers, libraries, housing, parks, historic areas, public transportation, cultural opportunity, and the like have attracted new and diversified business and industry.

Unfortunately, those communities that need improvements most often can afford them least. It is in the best interests of the State as a whole, as well as the affected communities, that a way be found to improve their situations. For this purpose, *it is recommended that the State establish a Community Improvement Revolving Fund,* adequately capitalized, for the purpose of assisting communities to build or improve essential public facilities. In operation, the fund would be comparable to the Federal public facility loan program administered by the Department of Housing and Urban Development. It could supplement assistance available through other Federal or State programs, or from conventional sources; provide both grants and loans; and flexibly assist depressed areas to provide the facilities and services needed to make them not only functional and efficient, but attractive, satisfying places in which to live.

The dramatic economic growth of Colorado's Front Range, southern New England, and coastal California testify to the drawing power of natural beauty and adequate levels of public service and amenities. Pennsylvania has many economically depressed regions of superb natural beauty and abundant recreational opportunities. Investments to upgrade the facilities

and cultural opportunities of the towns and small cities in these areas could add the ingredient necessary to help them attract a better kind of economic underpinning.

Suburbs and Sprawl

Rapid urbanization and economic growth continue in some areas, dampened at present by a declining national economy. In these localities, the challenge is to achieve a fair balance between economic and market forces on the one hand, and on the other, to protect the environment, preserve natural beauty, and improve the quality of life.

It is difficult to suggest new ways for resolving such conflicts. Growth concerns are not recent; since the early 1950's planners, architects, social scientists, and others have called for an end to poorly-placed subdivisions, inadequate public services, loss of amenities and open space, and the monotony of the suburban monoculture. The remedies advanced usually include more and better planning and enforcement, better public transportation systems, and solving the basic social and economic problems of central cities that generate pressure for more sprawl. Such unimpeachable suggestions are acted on all too rarely. Two additional, more definitive measures are recommended:

Environmental constraints — The capacity of air, water, and soil to absorb pollution and accommodate use is better known now than it was 20 years ago, and the costs of exceeding such environmental limits more readily demonstrated. Intelligent application of this knowledge can help determine the amount and kind of growth that can be accommodated without risking costly environmental damage. It can also assist in selecting sites for housing and other necessary development.

Policy coordination — Land requirements for industrial development are an illustration of the need for clear policy direction. The Pennsylvania Industrial Development Authority (PIDA), has listed 73 industrial sites in the Capital region, including 50 in Lancaster County. Presumably, industries interested in locating in the Commonwealth would be directed to these areas. Since one-fifth of the remaining prime agricultural land in the State is in the Lancaster Plain, one wonders whether the recommendations should not have been based on broader considerations than the particular concerns of the Authority. Was the Department of Agriculture consulted? Were alternatives explored? Apparently not.

The great number of inter-relationships involved in land use decisions are a partial defense against charges of poor coordination and administrative confusion. But it is still the duty of policy to order the importance of these relationships. Assuring that new growth is located in appropriate places, and at the right time, would be mightily assisted by an announced set of goals and priorities binding on all State agencies.

Carrying Capacity — New Use for an Old Truth?

Natural scientists have long-recognized that animal populations are held in check by food supplies, and other natural factors; there seems to be an upper limit at which a species comes into balance with its environment. Beyond this maximum, ecological factors tend to force populations back to levels that can be sustained.

Recently, there has been interest in determining whether the concept of carrying capacity may also be applicable to human populations.[41] Supplies of food, water, and clean air obviously set gross upper limits. Do

[41] Michael F. Brewer and Patrick Petersilia, "Carrying Capacity as a Potential Guide for Community Growth and Regional Development," Background paper prepared for the Committee on Public Works, U. S. House of Representatives (Washington, D. C.: U. S. Government Printing Office, 1974).

such factors as crowding, congestion, and lack of amenities also affect human population levels by influencing productivity, emotional stability, and mental health?

For the present, the answer seems to be "Perhaps." Resource availability acts an an ultimate limit, of course. But the ability of society to adapt and invent is prodigious. It is clear that carrying capacity does not operate in the same way for a human population as it does for range cattle, for example.

Nevertheless, the notion that there may be optimum levels of community and population stability is worthy of further study. So-called "man/land" formulas are generally recognized as simplistic and of little use. But a better understanding of man's physical and psychological requirements as they relate to his surroundings might help answer difficult questions concerning how, and how much, we should grow.

Part V

A Land Use Program for Pennsylvania

"Governments, like Clocks, go from the motion Men give them . . ."

— William Penn, The Frame of Government of the Providence of Pennsylvania, in America, 1682

PART FIVE – A LAND USE PROGRAM FOR PENNSYLVANIA

Overview

This report has proposed programs and policies for:

- preserving agricultural lands, managing floodplains, and conserving mountain resources;
- protecting critical environmental areas; and
- guiding growth.

What organizational structure and administrative apparatus can best translate these proposals into action? How should the governments involved share the task? In short, what might a land use program for Pennsylvania look like, and how might it work?

Our studies over the past year have led to these conclusions:

1. *Most land use planning and regulation in Pennsylvania is now entrusted to local governments, and the traditions of the Commonwealth direct that it remain so.*

   However, the large number of local governmental units in Pennsylvania has resulted in fragmented decision-making, a lack of coordination, and uneven performance across the State. To help correct this, it is proposed that counties be adopted as the basic building blocks for local land use planning and regulation in Pennsylvania.

2. *The Commonwealth's commitment to regional planning should be strengthened.*

   Regional organizations can provide technical assistance, data, and information of significant value to local governments. They should also serve as the principal points of liaison between the State and the counties.

3. *The State of Pennsylvania needs to reassert its authority to regulate land uses of more than local impact.*

   Whether a gas station should be permitted at 5th and Main is a local decision; where a major oil refinery is located is a matter of State concern. Also, State action is needed to coordinate Federal programs that broadly affect land use in the Commonwealth.

4. *To organize and give initial leadership to a Pennsylvania land use program, the Governor, by executive order, should establish a Pennsylvania Land Use Commission with an initial tenure of three years.*

   The Commission would prepare a set of coordinated land use policies and present them to the Governor for his approval, or for transmittal to the Legislature for their action, if required; monitor agency performance related to such policies; oversee the development and operation of a unified, consistent permit system for controlling growth of regional or state-wide impact; provide advice to the Legislature and its committees, as requested; and ensure that all interests have adequate opportunity to participate in the policy-making process.

5. *Data and information are at hand to support the initial phases of a State land use program.*

   Improvements should be made in refining data needs, and upgrading methods for its collection and distribution. Adequate information is now available to make a solid beginning, however.

6. *The people of Pennsylvania will support an organized effort for better use of their land and landscapes. But they will insist that a balance be struck among economic imperatives, social needs, and environmental protection.*

The final sections of this report will examine these conclusions in greater detail.

I. LOCAL LAND USE MANAGEMENT: AN UNEQUAL PARTNERSHIP

Overview

Diagrammatically, Pennsylvania's local governmental structure looks something like this:

Total units of government (second only to Illinois): 4,915

Units of general purpose government exercising land use control powers:

67	51	962	92	1,461
counties	Cities	boroughs	first class townships	second class townships

Total: 2633

Strong local government is traditional in Pennsylvania, and local government is the appropriate place for making most land use decisions. As the American Law Institute points out:

> "... it is important to recognize that at least 90% of the land use decisions currently being made by local governments have no major effect on the State or national interest. Furthermore, most of those decisions can be made intelligently only by people familiar with the local social, environmental, and economic conditions."

But there can be too much of a good thing. Over 2,600 local jurisdictions exercising their land use powers independently, with no State supervision, and no need to consider impacts on neighboring jurisdictions, has brought about a crazy-quilt of land use planning and controls that blankets the Commonwealth.

A strengthened and coordinated system of local land use regulation in the Commonwealth is needed. This will involve reorganization rather than new or different units. The system needs reinforcement, not recasting.

The Tangled Local Skein

Under the Pennsylvania Municipalities Planning Code (Act 247), local jurisdictions are empowered to plan and regulate land use through such measures as zoning, subdivision regulations, planned residential development ordinances, official maps, and acquisition of land for open space purposes. (See supplementary legal study.)

It is interesting to consider performance under this delegation:

- There is no reliable record in the Commonwealth of what localities across the State are doing in the way of land planning and regulation. It appears, however, that less than half the Commonwealth's municipalities have enacted zoning ordinances. Most have adopted subdivision regulations. Few other land use controls are in operation.
- The Planning Code provides that local plans or ordinances repeal existing county plans or regulations. Intended to encourage planning and regulation by municipalities, the provision has instead served as an escape hatch for localities that wish to circumvent county land use regulations by enacting less stringent ordinances of their own. It has had the effect, also, of placing the county in a temporary, custodial role — hardly an incentive for devoting much attention to land use problems.

- Once ordinances are enacted, inspection and enforcement are performed by the municipality or county according to its own wishes. In several areas, enforcement is so lax or uneven that plans and ordinances are of little consequence — nonconforming uses and development continue unchecked. Elsewhere, lack of personnel, or personnel with no particular qualifications or training, have made a mockery of local land use regulation.
- Local governments have no means for dealing with issues or opportunities outside their boundaries. In effect, concern for preserving the autonomy of local decision-making has erected barriers to inter-governmental cooperation. Authority is needed for municipalities to work together on common concerns. (For example, in North Carolina, municipalities are empowered to control land use, guide development, and administer regulations up to one mile beyond their corporate limits; larger cities have power to enforce codes up to 3 miles beyond the city limits.)

Bringing order to the jumble of governmental units that now influence land use in the Commonwealth is of first importance. Little improvement can be expected until this ragged mosaic is brought into some reasonable symmetry.

For this purpose:

It is recommended that the State's 67 counties be adopted as the logical units upon which to base a more equitable, workable local land planning and regulatory process in the Commonwealth.

Generally, counties have demonstrated a greater capacity for effective planning and regulation than their member municipalities. In part, this is because counties have been able to capitalize on certain advantages — more and better land use data, greater staff capability and technical expertise, and superior financial support.

More importantly, counties are a practical political and geographical basis for carrying out many land use responsibilities. Traditionally, county functions in Pennsylvania have included administration of elections, assessment of property, construction and maintenance of county buildings and public facilities, and local administration of welfare.

County courts are a principal element in the State's judicial system. Recently, counties have assumed responsibility for social and economic concerns; for example, they now establish health programs and undertake urban redevelopment.

County governments have been criticized for their unresponsiveness to changing conditions, and for the political overtones of their decision-making. There has been some progress in overcoming these weaknesses. Home rule provides a further opportunity for improvement, including revamping the out-moded three-commissioner form of county government with more modern and representative structures.

As basic building blocks in a State land use program, counties have some particular advantages:

- they have governmental powers;
- they are large enough to have a perspective beyond that of individual communities;
- they have close ties with both local governments and regional agencies;
- they are manageable in number — 67;
- they are relatively equal in size.

For these reasons, Pennsylvania's counties are the appropriate local government units to:

- prepare and carry out basic framework land use plans and programs; and
- enforce State land use regulations.

County Land Use Plans and Programs

1. Each county should be charged with the preparation of a land use plan and program. These would provide a baseline of land use planning and regulation of reasonable consistency across the State. (In multi-county urbanized areas where regional plans are in effect, as in Philadelphia and Pittsburgh, care would be taken to maintain consistency between county and regional plans.)
2. Municipalities — cities, townships, and boroughs — would continue land use planning and regulation, but their policies and standards would not be permitted to evade or undercut the basic framework plans and regulations of the county. Counties would review municipal plans and regulations to make these determinations. The purpose of such reviews would be to assure conformance with minimum county standards, not stifle local initiative.
3. County land use planning processes should identify critical environmental areas, and needs or proposals for growth and development of

more than local concern. These recommendations would call the attention of State agencies to matters they might otherwise overlook, and provide useful local viewpoints.

It should be emphasized that local planning and regulation would continue — in fact, be further encouraged — under this arrangement. As at present, the plans and regulations of municipalities would be of a level of detail necessary to meet community and neighborhood needs, and therefore of substantially finer grain than that undertaken by counties.

County plans would provide the basic framework for such local efforts. They would be of larger scale, and deal with land use and development problems of broader concern. They would also assure a basic level of land use planning and regulation which could be enhanced by municipalities, but not evaded or subverted by them.

County Enforcement of State Land Use Regulations

It is recommended that counties serve as the principal point for enforcement of State land use guidelines and standards, and for the issuance of permits. The State would monitor county performance, and provide advice and assistance as necessary.

Developers and others seeking permits and other approvals now are often required to turn to three levels of government — municipal, county, and State. Placing responsibility for issuance of most State permits at the county level would serve three useful purposes;

- free the State from administrative duties requiring time, money, and personnel that would be better used for other purposes;
- strengthen county land use programs, and improve their ability to coordinate land uses; and
- save the public time, and avoid confusion in obtaining necessary permits.

It is proposed that the State delegate its responsibilities for permit issuance, not divest itself of them. Should a county fail to administer State standards properly, the delegation could be withdrawn. In instances involving development of particular significance or controversy, the State might decide to retain full control. But barring such events, county enforcement of State regulations would be the normal operating arrangement.

Action Required

Some counties are not equipped to carry out these tasks; burdening them with the responsibilities without providing necessary help could undercut State regulatory programs, and further reduce the quality of local land use planning and management.

Most counties that operate planning and land use programs will require additional financial support and technical assistance in order to discharge these new responsibilities properly.

Less than half the counties have completed one or more elements of their comprehensive plans. Much of this work is out of date, and of limited value. In many cases no action is being taken to carry out plans, and enforcement and inspection are minimal.

- Agreement should be reached on a reasonable level of county planning and implementation. State, regional, county, and professional organizations can assist in this determination. Costs of reaching this level of performance should be shared between the county and the State.

In some rural or wild land areas, regional agencies may need to act as surrogates for the county.

- Where there is not minimal capability or experience in land use planning and regulation, counties may wish to turn to regional agencies to carry out the work involved, at least at the outset. In certain undeveloped regions, these arrangements might be more or less permanent. Elsewhere, counties could ultimately assume their obligations directly.

Revision of the Pennsylvania Municipalities Planning Code (Act 247) would be required to carry out these recommendations. In particular, the Code should be revised to:

- require counties to prepare, adopt, and carry out land use plans, and define the purposes and components of such plans; and
- assure that land use plans of municipalities conform to the broad outlines of county plans.

Many planners and local officials believe an overhaul of the Code is needed to make other improvements as well. Certainly reform is necessary if the Commonwealth is to have an effective, fair, and reasonable system for planning and regulating local land uses. Lodging responsibility for guiding local land use planning at the county level would

be a major step forward. It has the important advantage, also, of being operationally sound, and the least disruptive of existing arrangements.

II. SUBSTATE REGIONS -- PIVOT POINTS FOR PLANNING

It would be difficult to draw on a single map of Pennsylvania the regional boundaries of all Federal and State agencies operating in the Commonwealth.

- Most State agencies administer their programs through regional offices. The boundaries of these regions rarely coincide — PennDot, DCA, DER, and Agriculture are all different, for example. There are even different districts and regions within the same department.
- The Federal level is equally confusing. Some agencies, such as the Bureau of Outdoor Recreation, operate through multi-state regions; others, like the Soil Conservation Service, have state offices; the Corps of Engineers works through sub-state districts; still different regions are used by the Appalachian Regional Commission; the four interstate river basin commissions concerned with Pennsylvania, the Economic Development Administration, the Forest Service, and other Federal departments and agencies.

There are good reasons for some of these differences — matters of law, physiographic provinces, and so forth. But the cumulative effect is to make coordinated planning and management more difficult.

To bring some order to State operations, Governor Shapp, in 1972, approved an executive order creating 10 multi-county regions to serve as the base for substate planning. Unfortunately the order is rarely observed; regional operations of State agencies continue essentially as before. Efforts by the Office of State Planning and Development to give emphasis to the new arrangement of uniform regions have had little success.

Three regional planning commissions and seven regional economic development and planning agencies have service boundaries that approximate those of the ten uniform districts. They constitute the substate regional planning capability of the Commonwealth. But their capabilities, organization, and priorities vary widely.

The Regional Role

The regional perspective is an inherently useful one. Its advantages include:

- boundaries that often reflect meaningful physical, social, or economic units;

- a size and range of activities that make it possible to attract and support a versatile, trained staff, and to provide them with reasonable facilities and equipment;
- a capacity to help coordinate State and Federal activities; and
- a large and varied constituency that affords some insulation from local pressures.

For planning purposes, in particular, these are important advantages. They have assisted regional agencies to develop and coordinate useful planning programs in such subject areas as land use, transportation, housing, open space, and recreation. Regional agencies concerned with economic development have naturally emphasized these concerns in their planning.

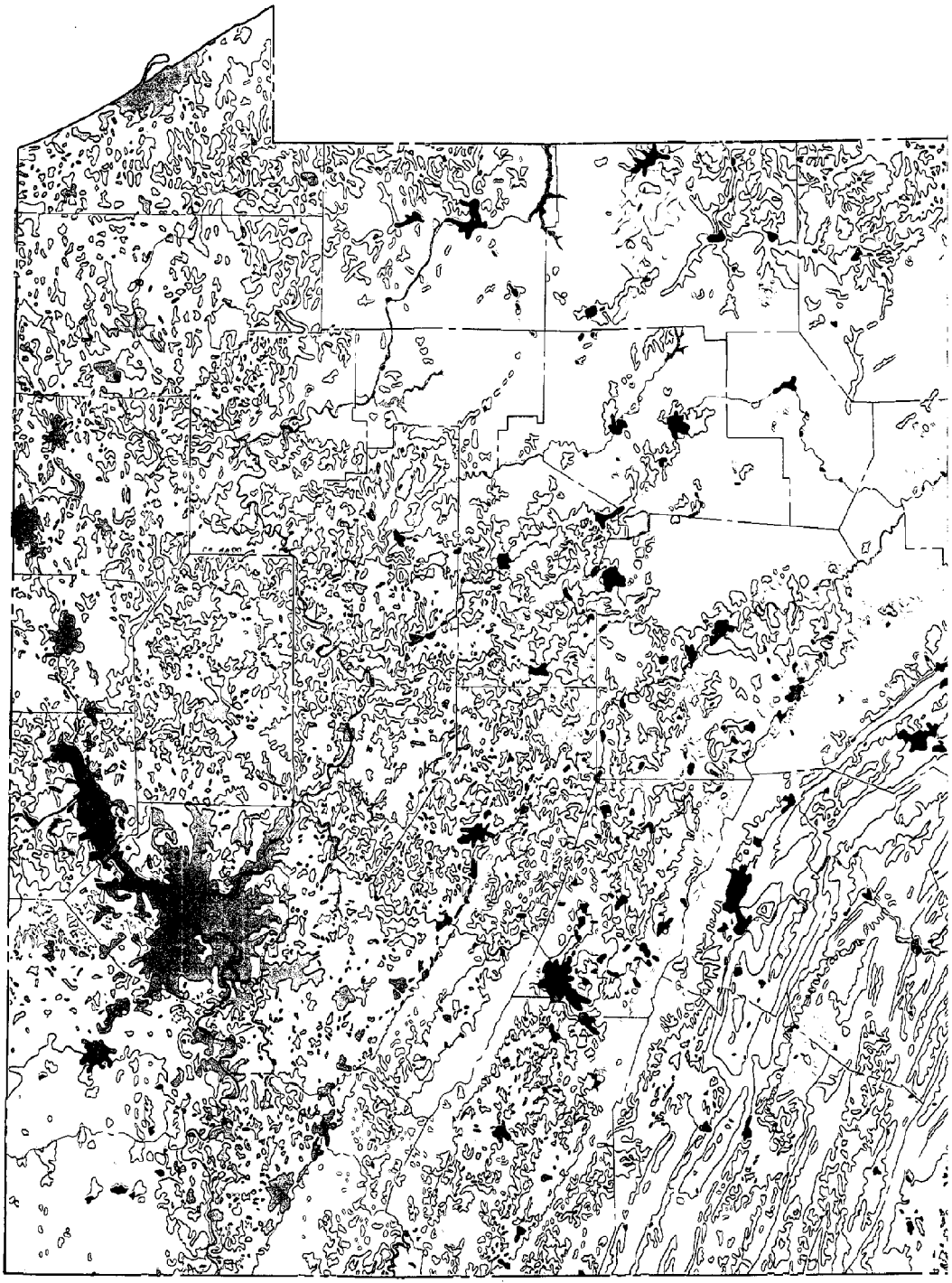
Regional agencies also can help coordinate action by Federal, State, and local governments, as several demonstrated in the aftermath of the Agnes disaster. Their role in the A-95 process (coordination of local proposals for Federally-funded projects) is further evidence of the usefulness of regional agencies as pivot points in the governmental process.

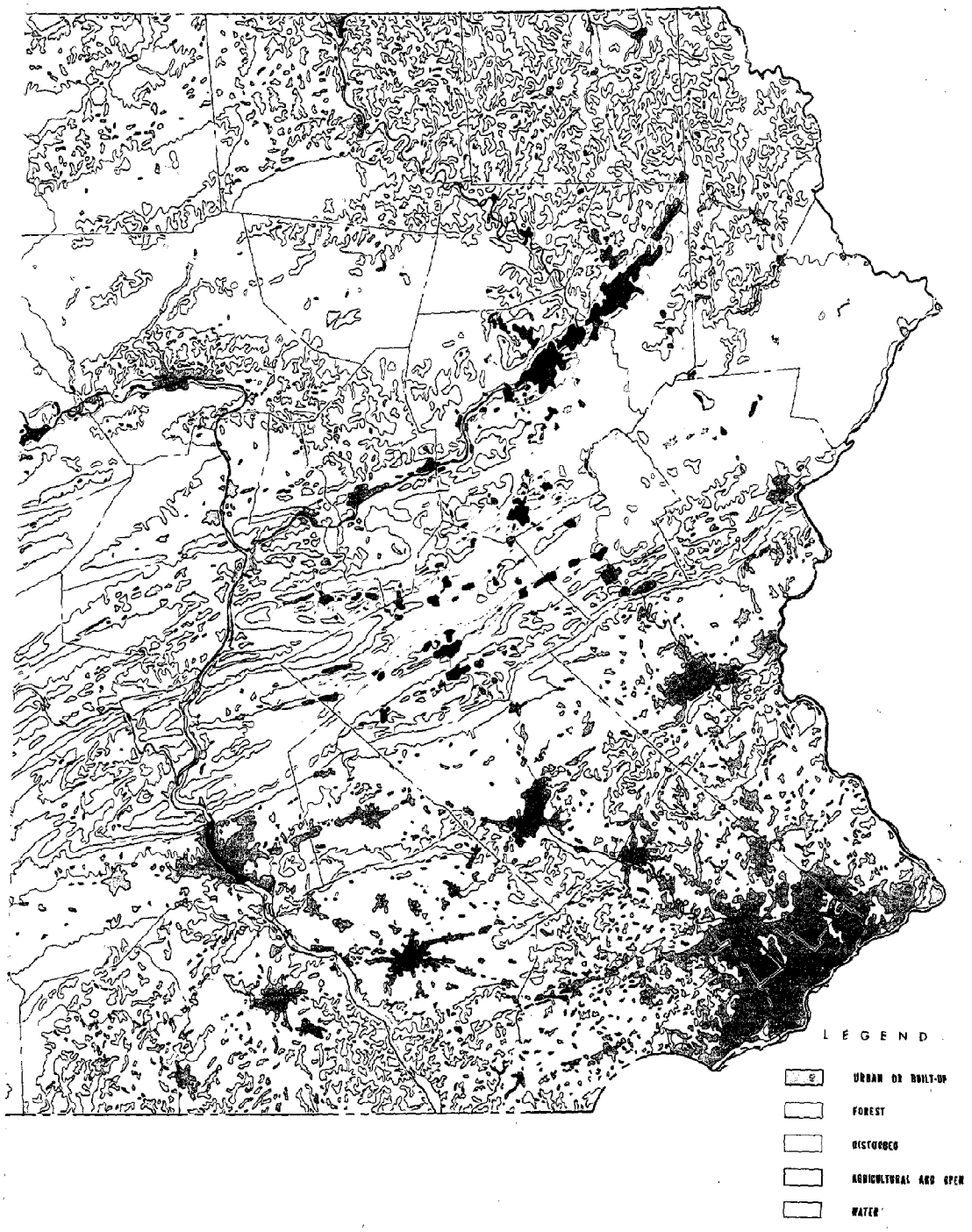
But useful and sensible as the regional perspective may be, it does not correspond to any level of general purpose government. There are no elected regional governmental officials; laws and ordinances are not enacted or enforced at that level; nor are general taxes levied and collected there. Shaky financing further limits the activities of many regional agencies; most are heavily dependent on Federal funding. In fact, Federal funds, and the performance of Federally required functions such as regional coordination and review, provide the major support for regional agencies in Pennsylvania.

These strengths and limitations shape the regional role in land use planning and regulation. Thus, enforcement of land use regulations clearly is not a regional function. But regional agencies can be of great value by performing such functions as:

- coordinating the planning programs of contiguous counties;
- providing technical assistance and support, particularly in specialized fields where local governments have little experience or staff capability;
- representing the interests of local governments to State and Federal agencies;
- serving as a base for data collection and distribution;

GENERALIZED EXISTING LAND USE




LEGEND
URBAN OR BUILT-UP
FOREST
DISTURBED
AGRICULTURAL AND OPEN
WATER

- carrying out regional framework planning, such as transportation, open space, economic development, and river basin;
- providing a forum for consideration of controversial questions that local governments can deal with only under great pressure, such as sites for low-and middle-income housing; and
- acting as surrogate for counties not able to assume their land use planning and management responsibilities.

State Assistance

The State commitment to regionalism varies by time, region, and subject matter. A stronger, more consistent level of support would yield important benefits at modest cost. Two kinds of assistance are needed:

1) *Financial help.* Core operating budgets should be sufficient to permit regional agencies to pursue a balanced program. Too often, programs are skewed by the need to do work which can be funded, such as transportation planning and economic development, while social and environmental concerns receive little attention.

2) *Increased participation.* The State can strengthen regional agencies by:

- giving them meaningful opportunities to participate in State planning activities;
- looking to them for the performance of certain functions, such as data collection and distribution; and
- making uniform regional boundaries meaningful in State agency operations.

III. THE CRUCIAL STATE ROLE

Overview

A number of states have moved to reassert their land use authority:

- Hawaii has instituted state zoning — probably the only state that will do so;
- Maine and Vermont regulate development at the state level;
- Florida is establishing state guidelines for directing growth and protecting critical areas. They will be enforced by counties;
- California and New York have established regional agencies to deal with special land use problems.

Colorado, Oregon, Maryland, and Minnesota, among other states, recently have enacted land use programs to meet their particular needs. (See supplemental study of state land use programs.)

In Pennsylvania, State departments and agencies are extensively involved in land use:

- DER controls key components of the development process through its regulatory responsibilities: water quality, sewage facilities, air pollution, and others. (See Table D.)

- DCA funds land use planning by Pennsylvania's local governments, coordinates the Federal urban planning assistance program, provides limited technical assistance, and is responsible for the Federal flood insurance program in Pennsylvania. In addition, the agency has a powerful but rarely used "convener" authority for coordinating the activities of other State agencies.

- PennDot exerts strong influence on land use through the highway construction program.

- The Department of Commerce program to encourage economic development can have important land use impacts.

- Most of the program of the Department of Agriculture relates to land use.

- Management of State lands in the custody of the Game Commission and the Fish Commission affect use of adjoining lands, and involve critical environmental areas of state-wide concern.

- The Office of State Planning and Development has been designated the lead agency for State land use planning policy. OSPD also is responsible for assisting land use and related activities of regional agencies.

Despite this substantial State involvement in land use planning and regulation, there is no unified policy framework, or set of common goals. Priorities, guidelines, and procedures are hammered out individually by each agency. There is little attempt at interagency review or coordination.

TABLE D
PERMIT AUTHORITY OF THE
DEPARTMENT OF ENVIRONMENTAL RESOURCES*

Air pollution permits
Deep mine drainage permits
All surface mining permits

Sewage facilities plans

Solid waste plans
Solid waste disposal site and facility permits

Water quality management permits
Erosion and sediment control plans and permits

Dam permits
Water obstruction permits
Limited power permits
Limited water supply permits
Water works construction permits
Dredging permits

Licenses to cross forest, park, and
submerged lands of the Commonwealth

**Represents only the Department's major land use-related permit authority*

The Major Tasks

While the Commonwealth's record of resource management and environmental protection has been excellent, there has been increasing need for an organized State land use program:

- pressures on certain lands, for certain purposes, have become severe;
- demands for energy require a long-range, coordinated response;
- agriculture faces an uncertain future;
- land use impacts of Federal programs — air pollution control, water quality, flood insurance, and others — require State guidance.

In turn, these considerations need to be fitted to basic Commonwealth goals of a healthy economy, improved housing, and greater opportunities for all its citizens.

The experience of other states suggests that to be effective, a state land use program needs to have a capability for:

1) formulating a long-range land use strategy for the State, and assuring meaningful citizen participation in the process;

2) developing policies, guidelines, and standards for carrying out the strategy;

3) installing necessary organizational and administrative arrangements; and

4) establishing an effective appeals and recourse process.

First, a point of responsibility for organizing and guiding the program must be selected. Here again, states have varied widely in their choices. Some have created new agencies; others have added new responsibilities to existing agencies; still others have relied on interdepartmental boards. (The choices seem to have had little relationship to costs, which have been modest.)

The choice in Pennsylvania turns on the need for an administrative focal point that can:

- provide fresh leadership;
- bring a broad viewpoint to its tasks;
- command the respect of State departments and agencies;
- work harmoniously with the legislature; and
- enlist wide public support.

To meet these requirements, it is recommended that the Governor, by executive order, create a Pennsylvania Land Use Commission.

It is further recommended that the Commission:

- be an independent body of 12-15 members, appointed by the Governor and reporting to him through its Chairman;
- be assisted by a small, highly-trained staff;
- include members of the Legislature, local and regional officials, and private citizens representing a range of interests and regions of the State;
- secure advice and assistance of State departments and agencies through a formal, continuing arrangement, such as an interdepartmental land use advisory committee; and
- be established for an initial period of three years.

The Commission would advise and assist the Governor on matters of land use policy, and be available to the Legislature for consultation. It would be responsible for framing, organizing, and seeing to the installation of policies and procedures for a Commonwealth land use program. Its principal concerns would be policy and oversight, not operation or administration.

In carrying out its work, the Commission would be responsible for:

Establishment of State Land Use Goals and Guidelines

First attention would be directed toward developing policies with respect to the basic landforms and growth concerns addressed in this report: farmland, floodplain, and mountain lands; critical environmental areas; and major growth activities.

Coordination of Agency Operations

Administrative agencies tend to have tunnel vision; their first concern, understandably, is for the programs and functions with which they are charged. The Commission would bring about necessary meshing of related activities by:

- review and approval, for land use policy purposes, of agency regulations and procedures significantly affecting land use;
- analysis of appropriate elements of annual agency budgets, and advice to the agency and the Governor concerning its relationship to State land use program objectives; and
- similar advice with respect to legislative recommendations of State departments and agencies.

Regulation of Major Growth

The Commission would have oversight responsibility for design and operation of a State program to regulate growth and development of more than local concern. The regulatory process would be based on enforcement by counties of State guidelines and standards. An impact analysis approach would be employed to determine the effects, costs, and benefits of growth proposals.

Oversight of Federal Programs

The land use impact of Federal programs can be decisive. Yet there is now no mechanism available to the Commonwealth to coordinate, and on occasion to intervene, in such Federal activities. The Commission would provide a logical point for fulfilling this increasingly important function.

Promotion of Citizen Participation

The Commission would be a major force for assuring public awareness and appropriate involvement in State policy decisions significantly affecting land use and development.

Review of Commission Functions

After an initial term, it may become clear that these Commission functions should be modified, expanded, or shifted elsewhere. Accordingly, it is recommended that the Commission's authority expire at the end of three years, to be extended or terminated by the Governor according to his view of the needs at that time.

Office of State Planning and Development

The capabilities of this Office should be strengthened so that it can:

1) provide stronger support to the uniform regions; and

2) lead the State land use data and information program sponsored in other sections of this report.

State Departments and Agencies

It is not proposed that the present land use authority of State agencies be disturbed, although operational responsibility for permit issuance would be delegated to county governments as they were able to accept them. These delegations would permit State agencies to give more attention to their other responsibilities, and particularly to providing technical assistance and improving enforcement.

State Leadership

In every instance, state land use programs can be traced to one of two circumstances:

- an urgent, over-riding issue that captured the public concern (such as indiscriminate development of California's coast and Vermont's mountains); or

- vigorous action by a governor to convince the legislature and the electorate of the need for a land use program to deal with environmental and related problems (as in the case of Governor Tom McCall of Oregon and Governor Russell Peterson of Delaware).

In several states, such as Florida, there has been both strong executive leadership and an issue of state-wide concern.

As has been pointed out previously, no single land use issue is likely to galvanize the Commonwealth to action. Disappearing farmlands, floodplain management, economic stagnation, housing needs, suburban sprawl, mining, and other land use-related problems are of deep concern to many. But that concern is more likely to respond to proposals for action than to initiate them. In Pennsylvania, strong executive leadership will be the indispensable requirement; without it, there will be no land use program for the Commonwealth.

Legislative Support

The process of building a balanced, effective State program will require legislative support, direction and thrust.

To provide further guidance, and promote the exchange of information among concerned committees, the Legislature might wish to create a joint House/Senate Land Use Oversight Committee. This committee, comprised of members of standing committees whose responsibilities bear on land use, could:

- hold hearings to develop a Commonwealth consensus on how best to deal with major land use questions;
- consider an annual land use report which the Governor would be requested to furnish for information of the joint committees; and
- serve as a forum for determining land use program priorities.

IV. MEASURING THE STATE OF THE STATE: A PENNSYLVANIA INVENTORY AND INFORMATION SYSTEM

Sensible policies, effective plans, and efficient program operations depend on timely, accurate data. Flexibility, range of uses, accessibility of the data, and how, and by whom it is collected, stored, and distributed, are important to the operation of a State land use program. Cost, speed, and simplicity are further considerations. Other concerns include ease of keeping the data current, and whether it will be practical to mate new systems with present data programs.

Surprisingly, too much data is sometimes available. Yet particular needs of planners, policy-makers, biologists, engineers, and other practitioners often go unmet.

Sometimes the desired data simply has not been collected — Pennsylvania's floodplains are not yet fully mapped, for example. More often, it is not in a useful form; for example, regional, county, and local agencies prefer maps with a scale of 1:24,000 or less, according to the size of their jurisdictions, whereas State and Federal agencies commonly use a scale of 1:62,500. The transfer of data under such circumstances is difficult. Definitions also pose major problems — thus, either 247,000 or 430,794 acres of land in Pennsylvania have been disturbed by coal mining activities, depending on how one defines "coal-mining activities."

The Present Situation

- An abundance of land use data is collected by a variety of agencies in the Commonwealth, but it is not coordinated, standardized, or readily available to many who could use it.
- There is great variation in data gathering at substate levels: some counties and regional planning agencies have sophisticated systems of data collection, some have nearly none. Most counties have done some land use data collection and publication under Federal grants (largely the HUD urban planning assistance program), for tax purposes, or to meet other special requirements.
- At the State level, OSPD has attempted to coordinate the collection of land use and related data by State agencies, with indifferent success. The Office also has prepared a preliminary listing of data now collected by State agencies.
- There do not seem to be sufficient advantages to State agencies to encourage basic shifts in their present practice of gathering only those data needed to support ongoing program efforts.
- The Comprehensive Water Quality Management Planning (COWAMP) project, a program to develop a comprehensive picture of the State's land and water resources as they affect water quality, is probably the best major land use data collection effort being undertaken by the State. Nevertheless, COWAMP, administered by DER, has been criticized for failing to coordinate its format, regions, and data classification system (terms and definitions) with other State data collection efforts. It is feared that the information secured will not be easily combined with that collected under other programs, and thus its value will be limited. This lack of standardization and coordination is a major problem of State data collection efforts.

- Federal data collection programs underway that affect Pennsylvania include 1) a nationwide land use classification by the U. S. Geological Survey (USGS), which will use Earth Resources Technology Satellite (ERTS), and high altitude photos to map 35 land use categories, and 2) a comprehensive land and related water area inventory for western Pennsylvania. The latter is administered by the Pittsburgh District Office of the Corps of Engineers. It will not include either eastern or central Pennsylvania.

Approach Proposed

The basic need in Pennsylvania is to coordinate, standardize, and make accessible the variety of useful land use planning data being collected by Commonwealth agencies and institutions, including related socio-economic information. A monolithic inventory (or data bank) approach is *not* recommended at this time; instead the thrust should be to improve the usefulness and efficiency of present data collection, aggregation, and distribution efforts.

Why Not a Major New System?

A major unified program of data collection, aggregation, storage, retrieval, and distribution — a one-stop data and information system capable of supplying all classes of data — has superficial appeal. But it is not recommended that the Commonwealth undertake such a venture now, for several reasons:

- it would be enormously costly;
- such systems tend to supply a surplus of data;
- a monolithic system often fails to provide the particular data needed by different users in a form useful to them;
- there are not yet a sufficient number of users with the training needed to fully utilize a computerized central data bank.

Elaborate data collection and retrieval programs, such as New York's Land Use and Natural Resource Inventory (LUNR), the Natural Resource Information System (NARIS) of Illinois, and Pennsylvania's COWAMP are to be commended for trying to coordinate and standardize data needs and systems. (See Table E.) Available information suggests that they are finding it a complex and expensive task. Individual agencies tend to be concerned largely with information needed for their own purposes, and it is most difficult to design a single system that can meet all their requirements at a reasonable cost.

TABLE E

GEOGRAPHIC INFORMATION SYSTEMS AND RELATED COMPONENTS – JANUARY 1, 1972

NAME	CLASSIFICATION	
	TYPE	STATUS
CGIS–"Canadian Geographic Information System" Canada Department of Regional Economic Expansion	System–area boundary	Feasible
Waterways System–Waterways Experiment Station U.S. Army Corps of Engineers	System–network	Implemented
STORET–"Water Quality Data Storage and Retrieval System" U.S. Environmental Protection Agency	System–network	Experimental
BATSC–"Bay Area Transportation Study Commission"	System–point	Implemented
IMIS–"Integrated Municipal Information System Charlotte, North Carolina	System–Municipal information management system	Experimental
MIDAS–"Maine Information Display–Analysis System" Maine Department of Inland Fisheries and Game	System–tape data management system	Developed
AUTOMAP–Central Intelligence Agency	Module–cartographic	Implemented
TOPOCOM–U.S. Army Topographic Command	Module–cartographic	Implemented
ILLIMAP–Illinois Geological Survey	Module–cartographic	Developed
Canadian Hydrographic System–Canadian Hydrographic Service	Module–cartographic	Experimental
Experimental Cartographic Unit–England–Royal College of Art	Module–cartographic	Experimental
LINMAP–"Line Printer Mapping" England–Ministry of Housing and Local Government	Module–printer mapping program	Feasible
SYMAP–Laboratory for Computer Graphics Harvard University	Module–printer mapping program	Implemented
GRID–"Grid Related Information Display System" Southern California Regional Information Study	Module–uniform grid printer mapping	Developed
SACS–"Street Address Conversion System" Urban Data Center, University of Washington	Module–street address to x,y coordinate conversion	Developed
MIADS–"Map Information and Display System" USDA Forest Service	Module–uniform grid base file	Implemented

NAME	CLASSIFICATION	
	TYPE	STATUS
LUNR–"New York State Land Use and Natural Resources Inventory" Center for Aerial Photographic Studies, Cornell Univ.	System–uniform grid	Implemented
GRIDS–"Grided Resource Inventory Data System" Dept. of Natural Resources, State of Washington	System–uniform grid	Developed
LUIS–"Land Use Information System" Univ. of Massachussets Forestry Dept.	System–uniform (dot) grid	Developed
CMS–"Composite Mapping System" U.S. Dept. of Commerce–Economic Development Administration	System–uniform grid	Feasible
ORRMIS–"Oak Ridge Regional Modeling Information System" Oak Ridge National Laboratory	System–uniform grid	Experimental
NARIS–"Natural Resource Information System" Univ. of Illinois Center for Advanced Computation and the Northeast Illinius Natural Resource Service Center	System–non-uniform grid	Developed
MLIS–"Minnesota Land Information System" Univ. of Minnesota	System–non-uniform grid	Planned
GIST–"Geographic Information System" New York City Office of Administration Office of the Mayor	System–generalized parcel (block face centroid)	Implemented
DIME–"Dual Independent Map Enclosing" ADMATCH–"Address Matching" U.S. Bureau of the Census	System–generalized parcel base file and address conversion system	Developed
GRDSR–"Geographically Referended Data Storage and Retrieval System" Dominion Bureau of Statistics Canada	System–generalized parcel (located by centroid)	Developed
IIPS–"Inter-Institutional Policy Simulator" Univ. of British Columbia	System–generalized parcel and area boundary	Feasible
French Information Network for Regional and Urban Planning–Observetoire Economique Mediterranean	System–generalized parcel	Experimental
FRIS–A Spatial Information System Central Board for Real Estate Data, Sweden	System–generalized parcel	Planned
MAP/MODEL–Bureau of Governmental Research and Service University of Oregon	System–area boundary	Implemented

SOURCE: Center for Advanced Computation
University of Illinois at Urbana-Champaign

A Data and Information Program for Pennsylvania

A flexible, effective data and information system requires skills and achievements that cannot be accomplished overnight. The essential ingredients are the education, cooperation, and communication of operators and users, not simply the application of advanced technology. Standardization of terms and definitions also is vital. For these reasons, the development of a data system for the Commonwealth is viewed as a continuing process that evolves, over time, into a mature program. In the interim, it should produce necessary information at reasonable cost, relying more on human skills and less on sophisticated hardware and technology. This balance can shift as the mature inventory program relies more heavily on the resources of a central data bank.

The following steps are recommended to establish the system:

1. *Improve accessibility of existing data by means of a publication, up-dated twice each year, which:*
   - lists data by subject, key words, and geographical area;
   - notes who collected data, where it is stored, what form it is in (published material, computer tapes, etc.), format (map, tables), scale, date of collection, etc.;
   - is widely available in libraries, public agency offices, and State universities; and
   - includes abstracts of reports, or provides annotated lists of relevant projects and papers.

The State computer center periodically publishes a bulletin announcing new government publications. In its present form, this publication is inadequate as an all-purpose data reference, since it does not provide necessary detail about the documents it describes. However, consideration could be given to re-casting the periodical to serve the needs identified above.

2. *Provide assistance in locating information through a central "hot line" office.* At the outset, this service would give general assistance as to where to find the data needed. Later, it could be developed into a sophisticated referral service, responding to telephone or letter requests. It would be important to develop a record of requested information to help in planning future data acquisitions.

3. *Establish minimum standardization of all data collected by State agencies, or by State-funded or assisted projects.* Standards would require new data to: include specific information, such as geo-reference (e.g., latitude-longitude); use standard terminology (referring to a series of established definitions); and conform to an approved classification system.

4. *Create a data clearance procedure to eliminate duplication and overlap, and assure that data collected would serve the broadest range of uses.* Operation of the clearance process should be the responsibility of a special OSPD data unit.

5. *Assemble an initial "bare-bones" state-wide data base in a centralized computer bank, accessible through the OSPD data unit.* Initially, data available from the USGS should be stored, followed by COWAMP data when the two systems can be mated. The resulting gross land use data would provide the essential information for an official base map that could be up-dated regularly. The completed map should be made widely available, together with a listing of usable overlay information.

6. *Establish a special data unit in OSPD for:*

   1) coordination of agency data programs;

   2) operation of the State data base computer bank;

   3) development of a bibliography and reference service, and supervising its operations (actual work probably should be carried out by libraries and universities);

   4) manning of the "hot line";

   5) production and publication of an official dictionary of standard terminology and definitions (also a contract operation);

   6) establishment of data collection standards (working closely with both users and collectors of land use and related information);

   7) monitoring of service provided those requesting information to see if their needs were satisfactorily met, and if not, why; and

   8) continuously assessing user needs.

The Mature System

In four to seven years, the interim system could be upgraded and improved to a mature, stabilized land use data and information program with the following characteristics:

- maximum capability for use of available Federal, State, and other information sources and systems;
- minimum conflict and overlap between major data collectors and users;
- adequate information stored in central data bank to support most analyses and modeling functions;
- minimum time required to retrieve data not stored in central data bank;
- flexibility to make changes as needed to take advantage of developing technology, and meet new user needs.

Regional Centers

The diversity of the Commonwealth is reflected in its data needs. Accordingly, there is merit to the proposal advanced by the Mitre report that three information centers be established to service the State.[42]

A center to serve eastern Pennsylvania, located in Philadelphia, could emphasize the data required to meet urban seaboard development needs. A Harrisburg center should be particularly concerned with coordination of Federal and State planning, and serving data needs of regional and local governments. A western information center, in Pittsburgh, could emphasize data relating to resource uses, and their effect on environmental, economic, and social considerations.

The eastern and western centers could be operated by a university, a regional planning agency, or under a joint arrangement. The Harrisburg center should be operated by the OSPD data unit, which would also coordinate operations of the other centers.

The multi-center concept has a number of advantages:

- permits close regional coordination of State and Federal activities;
- provides a "service bureau" capability to area and regional users — planning agencies, business and industry, citizen groups, schools, etc.;
- can take advantage of special skills and experience available in the region, and in the agency or university housing the operation; and
- offers both specialized and state-wide data.

[42] The Mitre Corporation, *Resource and Land Information Program: System Concept, Implications and Development Plan* (October 1972), p. 7.

The mature data system would continue to emphasize cost efficiency, maximum flexibility, and good communication between users and operators. Although it would take advantage of new technology, its effectiveness would be based on the understanding that skilled personnel, as much as elaborate hardware, are the key to a successful data program.

V. EXPECTATIONS OF THE LAND

Overview

How do Pennsylvanians feel about their land, its uses, and its regulation? Do their views differ by region, occupation, age, income? Will they support a State land use program, and if so, what should be its priorities? To answer these kinds of questions, a survey was conducted of the land use attitudes of 25 groups of Pennsylvanians. In addition, in-depth interviews were conducted with over 50 experts in various fields concerned with the uses of land. These results were compared with the findings of other attitude surveys made in the Commonwealth, and elsewhere in the Nation.

National and international events and circumstances clearly influence Pennsylvania land use attitudes, often rather directly. For example, the prospect of mass starvation in Africa and Asia was frequently mentioned as a reason for preserving Pennsylvania farmlands. Among other general attitudes affecting views on land use:

- a new awareness of the limits of our physical environment to supply resources and assimilate wastes: 92% of our respondents believed that protection of natural ecosystems should be a principal purpose of a land use policy;
- an emerging public ethic that views land as a resource necessary to the well-being of all, as well as a commodity for private use and profit. Most respondents (64%) believed more public regulation of land use was needed;
- changing values, such as new emphasis on "quality of life"; and
- a widespread loss of confidence in the wisdom and probity of public officials, and in the ability of government to deal effectively with contemporary problems.

Pennsylvanians also show deep concern over the economy, the energy crisis (in which they take a particular interest), and the need for housing, especially for low-and middle-income groups.

The Pennsylvania Land Use Survey

In July, 1974, a total of 4,794 questionnaires was mailed to individuals in 25 groups throughout the Commonwealth. Respondents were asked for their views about:

- Pennsylvania's 10 major land use concerns;
- the effectiveness of various methods for regulating land use;
- recent suggestions for dealing with particular land use problems;
- governmental responsibility for land use regulation;
- why land use controls are opposed; and
- improving citizen participation in land use decisions.

To classify survey responses, information was requested as to place of residence, age, occupation, and income. Most respondents supplied their names and addresses, and many offered additional comments. A total of 1,225 responses was received, a response rate of over 25%, with the largest number of returns coming from regions 1 (Philadelphia) and 10 (Pittsburgh), followed by regions 3 (Lehigh), 6 (Capital), and 9 (Northwestern).

The survey was not intended to reflect a random sample of Pennsylvania opinions. Rather, it sought the views of groups and interest most directly concerned with land — farmers, landowners, builders and developers, planners, conservationists, businessmen, hunters and fishermen, citizens' groups, and others.

Variation in the response of different groups influenced results in ways that were difficult to take into account. For example, persons purchasing hunting licenses received the most questionnaires, but returned a very small percentage — 8% (49). On the other hand, 110 out of Pennsylvania's 305 members of the American Institute of Planners, or 36%, returned questionnaires. (See Appendix D for survey form and list of organizations.)

Regional Views

From questionnaire responses, interviews, and other opportunities to judge attitudes, certain regional viewpoints emerged:

- *The Philadelphia area* reflects a considerable understanding and sophistication about land use issues and options. Experience with rapid suburbanization has brought about a wariness of developers and development, and a more general acceptance of need for public regulation. Principal land use concerns include inner city rehabilitation, traffic congestion, disappearing farmland, floodplain manage-

ment, and need for more open space. County and local governments in the region fear the costs of growth, developers, and court intervention in land use controls. Developers and builders are deeply concerned over the anti-growth feeling of many local communities, and a reluctance to recognize change in a changing region.

- *The Pittsburgh region* is more concerned with the economy, personal versus public rights, the need for better transportation, and control of air and water pollution. People are more interested in hunting and fishing than in the eastern metropolitan area — more fishing licenses are sold in Allegheny County than in any other in the Commonwealth.
- *The Capital region* evidences a strong desire for local autonomy, and appears satisfied with local government structure and regulation. Yet it gives evidence of keen concern over development that continues to spread over some of the richest farmland in the State.
- *The Pocono area* is grappling with development problems caused by new interstate routes that have made the area easily accessible from the New York and Philadelphia metropolitan regions. Residents hope for benefits from new growth, but are angry and unable to cope with problems of absentee ownership, failed second-home developments, water, sewer, and erosion problems, and loss of natural amenities.
- *Appalachia* — the vast mountainous central region of the State — clings to fundamental views of individualism and the sanctity of private property. Many of its rural, poor, and isolated communities hope for houses, jobs, industry, and new roads. Yet there is resentment at the long term costs of land uses that have left scarred and worthless ground behind.

There is diversity, too, among different occupations and interest groups:

- *Farmers* seek government assistance to protect their lands against development and to help meet rising operating costs, but resent government intervention, and especially dislike public land acquisition and ownership.
- *Builders and developers* fear local rejection of their proposals, and would welcome State action to allocate housing sites over local community protest, if necessary. Above all, they seek predictability, and prompt, reliable land use regulation.
- *League of Women Voters and other citizen groups* tend to support regional land use controls, supported by State and Federal requirements. They emphasize the need for active citizen participation in land use decision-making.

- *Planners* complain about the inability to get their plans translated into action, and often blame their disappointment on political and economic realities; in turn, they are frequently labelled unrealistic by builders and local officials.
- *Public officials* believe they need more authority and funds to prepare better plans, and to enforce regulations. Most now welcome increased citizen participation and support.
- *Conservationists* divide into two general groups: those favoring increased government action to protect natural resources and environmental values, and a second group that emphasizes the use of private energies and funds to achieve similar public benefits.

The Key Land Issues

Preserving prime agricultural land, managing floodplains, siting key facilities, and guiding large-scale development — the factors singled out as key problems in this report — also were selected by questionnaire respondents as the most important land use issues in the Commonwealth. (See Appendix D for a tabulation of survey results.)

- Greatest concern was expressed over the need to *preserve agricultural land;* 61% of respondents rated it among the top 3 land use problems.
- About half of all respondents placed a high priority on *guiding large-scale development*, such as shopping centers, large subdivisions, industrial parks, etc.: 49% believed it to be one of the top three problems. Only 24% of respondents ranked it lower than seventh. As might be expected, from 55%-63% of the respondents from the four regions experiencing most rapid growth expressed the deepest concern.
- *Siting key facilities* (highway interchanges, power plants, sewage treatment facilities, etc.) ranked third, with 40% of respondents placing it among the top 3 land use concerns. (A particularly high proportion of planners and builders believed siting key facilities and guiding large-scale development to be of special importance.)
- *Regulating strip-mining, protecting floodplains, and managing forest and woodland resources* were closely clustered in fourth position: between 27-32% of respondents ranked them among their top three concerns.
- In last place on most lists was *protecting historic sites.* Only 9% of those returning questionnaires felt this ranked among the top three land use concerns.

In fairness, it must be pointed out that many respondents noted that all the problems listed were important, and that ranking them in priority order was most difficult. Thus, a low rank may relate more to the urgency attached to a problem, than its basic importance. (A Wilkes-Barre man who ranked protecting floodplains of first importance noted, "I may have felt differently about floodplains if I were asked prior to June of 1972.")

What Level of Government Should Regulate Land Use?

There was considerable support for regional land use regulation: 25% of respondents strongly agreed with this idea, while an additional 38% were generally in favor of it, and only 13% strongly disagreed.

However, some combination of State and local responsibility was most often favored:

- 29% of respondents strongly agreed, and an additional 33% generally agreed, that the State should develop land use standards, with enforcement handled by local governments (as proposed in this report);
- 28% of the respondents strongly agreed, and 35.5% generally agreed, that local land uses should be governed by local regulations, and land uses of State concern governed by State regulation;
- only 15% of the respondents felt strongly that there should be only local government regulation of land use (e.g. local municipalities and counties);
- the greatest resistance was expressed toward local government-only regulation (42% of respondents strongly disagreeing with that proposal) and toward State government-only regulation (34% strongly disagreeing).

As a group, most respondents (64%) felt that we need more public regulation of land use. Only 9% felt that we need less, and only 6% voiced no opinion. When asked how they believed the average Pennsylvanian felt about this, however, as many respondents felt that most Pennsylvanians wanted less regulation as wanted more (28% in each case). A significant number of respondents (23%) had no opinion on this question.

Regulate For What Purpose?

Respondents were asked their opinion of eight possible regulatory policies and purposes.

They most strongly favored (and expressed least disapproval of) the following two statements:

- *"more control is needed on the location along roads of commercial developments, such as quick food stands, gas stations, etc."* (72% strongly agree, and only 3% strongly disagree); and
- *"a principal purpose of a land use policy should be to protect natural ecosystems and maintain high environmental quality"* (69% strongly agree, and only 2% strongly disagree).

A majority also strongly agreed with the following three statements:

- *"neighboring communities should have the right to review plans for major developments such as shopping centers proposed to be located on or near their boundaries"* (63% strongly agree, and 4% strongly disagree);
- *"new development should be encouraged near areas already served by public facilities such as sewers and water, rather than in rural areas where public facilities now are unavailable or in limited supply"* (57% strongly agree, and 4% strongly disagree); and
- *"other means should be found for financing local facilities and services such as roads and schools, so that communities would not need to rely so heavily on the property tax"* (52% strongly agree, and 4% strongly disagree).

Less enthusiasm was expressed for the idea that *"a State land policy should give priority to preserving and protecting small towns"* (36% strongly agreed, 35% agreed generally, and 6% strongly disagreed).

The least popular ideas (though still having three times as many people strongly supporting as strongly against them) were:

- *"new towns should be planned to 'soak up' growth"* (31% strongly agree, and 10% strongly disagree); and
- *"a high priority of a land use policy should be to help ensure an adequate supply of housing"* (36% strongly agree, and 9% disagree).

Respondents were very confident about the usefulness of road locations as a means of guiding land use — 65% thought it was very useful, and 27% thought it was generally useful. Neither tax policies nor public acquisition of land received nearly the support accorded the other techniques. But all of the techniques were judged considerably more useful than not useful. (See Table F.)

TABLE F
ATTITUDES TOWARD LAND USE REGULATORY TECHNIQUES IN PENNSYLVANIA

REGULATORY TECHNIQUE RESPONSE	STATE TOTAL	STATE PERCENT
1. Zoning		
very useful	623	51%
moderately useful	486	40
not very useful	90	7
not at all useful	11	1
no opinion	15	1
TOTAL	1225	100%
2. Differential Assessment, e. g. lower assessment for lands in agricultural use		
very useful	597	48%
moderately useful	425	35
not very useful	110	9
not at all useful	37	3
no opinion	56	5
TOTAL	1225	100%
3. Public Acquisition of Land		
very useful	461	38%
moderately useful	417	34
not very useful	187	15
not at all useful	97	8
no opinion	63	5
TOTAL	1225	100%
4. Subdivision Regulations and Building Codes		
very useful	617	50%
moderately useful	459	37
not very useful	105	9
not at all useful	20	2
no opinion	24	2
TOTAL	1225	100%
5. Controlling the Location of Water and Sewer Lines		
very useful	684	56%
moderately useful	352	29
not very useful	140	11
not at all useful	16	1
no opinion	33	3
TOTAL	1225	100%
6. Controlling the Location of Roads		
very useful	802	65%
moderately useful	332	27
not very useful	59	5
not at all useful	11	1
no opinion	21	2
TOTAL	1225	100%
7. Tax Policies (in addition to the property tax)		
very useful	418	34%
moderately useful	386	32
not very useful	192	16
not at all useful	57	5
no opinion	172	13
TOTAL	1225	100%

On Environmental Impact Statements

Respondents were overwhelmingly in favor of requiring State, county, and municipal governments, public utilities, and private developers, to file reports explaining the environmental, economic, and social impacts of proposed projects and activities. As Table G shows, the largest negative response, 11%, was with respect to requiring local governments to prepare such statements.

TABLE G

RESPONSES REGARDING
ENVIRONMENTAL IMPACT STATEMENT REQUIREMENTS

Question — "Should the following be required to file reports explaining the environmental, economic, and social impacts of their proposed projects and activities?"

	Yes	No	No opinion
State	89%	6%	4%
Local municipalities and counties	84%	11%	6%
Public utilities and private developers	91%	6%	4%

Citizen Participation

As a final question, respondents were asked to judge the effectiveness of various means of achieving citizen involvement in land use issues.

Most respondents (53%) believe that public announcement of options being considered is an effective way to involve citizens in land use policy and planning, provided such notice is given during the early stages of planning. They also endorsed opening all official meetings to the public. Citizen-initiated court suits were viewed as less effective ways of achieving citizen participation. (See Table H.)

TABLE H

MECHANISMS FOR IMPROVING CITIZEN PARTICIPATION IN LAND USE DECISION-MAKING

RESPONSES

	Effective	Moderately Effective	Moderately Ineffective	Ineffective	No Opinion
Public Hearings	29%	45%	17%	8%	1%
Citizen Membership	43%	42%	10%	3%	2%
Open All Official Meetings to Public	42%	31%	17%	7%	2%
Citizen Advisory Committees	35%	32%	15%	5%	3%
Citizen Initiated Court suits	29%	31%	20%	12%	9%
Public Announcement of Options	53%	33%	8%	3%	3%

Among the Experts

The expert interview format was more detailed, and covered a broader range of subject areas. However, the thrust of expert views largely paralleled those of other respondents. For example:

- 70% believed water and sewer locations very useful for guiding growth;
- 65% judged road locations very useful;
- 64% were in favor of planned residential developments (PRD) that allow greater design flexibility within over-all restrictions; and
- zoning received a secure vote of confidence (48% found it very useful and 44% rated it moderately useful).

TABLE I

EXPERT OPINIONS OF NEW GROWTH CONTROL TECHNIQUES

CONTROL TECHNIQUE	RESPONSE	RESPONSE TOTAL	RESPONSE PERCENT
1. Windfall-Wipeout compensation			
	very useful	8	35%
	moderately useful	5	22
	not very useful	8	35
	no opinion	2	8
	TOTAL	23	100%
2. Development rights transfer			
	very useful	10	44%
	moderately useful	11	48
	not very useful	1	4
	no opinion	1	4
	TOTAL	23	100%
3. Tax on windfall profits			
	very useful	6	26%
	moderately useful	7	30
	not very useful	8	35
	no opinion	2	9
	TOTAL	23	100%
4. Minneapolis-St. Paul tax Sharing			
	very useful	7	29%
	moderately useful	10	42
	not very useful	6	25
	no opinion	1	4
	TOTAL	24	100%
5. Public Land banking			
	very useful	14	61%
	moderately useful	5	22
	not very useful	4	17
	no opinion	—	—
	TOTAL	23	100%
6. Urban Services boundary			
	very useful	13	65%
	moderately useful	5	25
	not very useful	1	5
	no opinion	1	5
	TOTAL	20	100%
7. Graduated capital gains tax			
	very useful	14	64%
	moderately useful	3	13
	not very useful	5	23
	no opinion	—	—
	TOTAL	22	100%

There was controversy among the experts on public acquisition: 52% rated it a very useful means for controlling land use, but 13% disagreed. Public purchase of scenic easements and development rights also received a mixed response (44% thought it very useful, 22% not very useful), as did subdivision regulations and building codes (36% in favor, 18% not enthusiastic).

One major distinction between experts and others was clear expert support for the view that "a high priority of a land use policy should be to help ensure an adequate supply of housing."

Experts also were asked their view of the usefulness of several new ideas that have been advanced for controlling growth in Pennsylvania. Their responses are shown in Table I.

The Public Response

The attitude survey stimulated a great deal of interest; dozens of people called or wrote seeking information about it, asking for questionnaires, placing their names on the mailing list to receive a report of its results. This same high level of interest was a distinguishing characteristic of the study as a whole. As a concern, land use turns people on; and there are no bystanders, only participants.

Shortly after World War II, the late Queen of the Netherlands paid her first visit to the United States. At a final press conference before returning home, after having travelled briefly about the United States, she was asked what characteristic of Americans had struck her most forcefully. Her reply: "In America, you still think there is an answer for every question."

Perhaps not all Americans are so sure any longer. But this survey, like others, found that Americans are convinced that at least some answers to fundamental questions facing our society are directly related to the uses of land. It seems clear, also, that as a Nation we share a new sense of stewardship obligation, and an emerging awareness of scarcity; not Malthusian handwringing, but a sober understanding that certain resources — land among them — are not limitless. And as Queen Wilhelmina observed three decades ago, there is a willingness to innovate, to test new solutions, to try to find good answers to tough problems.

We can think of no better way to enlist Pennsylvanians in this search for good answers than to involve them in creating a program that seeks better ways of using and conserving the basic land resources of the Commonwealth. Nor can we imagine a more fitting time to begin than on the eve of our nation's Bicentennial celebration.

Chief Sealth of the Duwanish Tribe in Washington wrote these words in a letter sent to President Franklin Pierce in 1855.

"The Great Chief in Washington sends word that he wishes to buy our land. How can you buy or sell the sky — the warmth of the land? The idea is strange to us. Yet we do not own the freshness of the air or the sparkle of the water. How can you buy them from us? Every part of this earth is sacred to my people. Every shiny pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people.

"We know that white man does not understand our ways. One portion of the land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother but his enemy, and when he has conquered it he moves on. He leaves his father's graves, and his children's birthright is forgotten.

"There is no quiet place in the white man's cities. No place to hear the leaves of spring or the rustle of insect wings. But perhaps because I am savage and do not understand — the clatter only seems to insult the ears. And what is there to life if a man cannot hear the lovely cry of the whippoorwill or the arguments of the frog around the pond at night.

"The whites too, shall pass — perhaps sooner than other tribes. Continue to contaminate your bed and you will one night suffocate in your own waste. When the buffalo are all slaughtered, the wild horses all tamed, the secret corners of the forest heavy with the scent of many men, and the view of the ripe hills blotted by talking wires. Where is the thicket? Gone. Where is the eagle? Gone. And what is it to say goodbye to the swift and the hunt, the end of living and beginning of survival."

Reprinted from "Conservation News," published by the National Wildlife Federation, Vol. 38, No. 22, November 15, 1973.

Summary of Major Findings and Recommendations

SUMMARY OF

MAJOR FINDINGS AND RECOMMENDATIONS

FARMLANDS, FLOODPLAINS, AND MOUNTAINS: RESOURCES UNDER PRESSURE

Four out of five acres in the State are farmland, floodplain, or mountain.

These are the most important landforms in Pennsylvania. The economy of the State depends on how they are used, and so does the quality of the Commonwealth's environment. Accordingly, each is considered as an individual sub-program of a unified State land use strategy.

PRESERVING AGRICULTURAL LAND

Half of the State's best farmland has gone out of food production, and many of the best remaining agricultural lands are near major urban growth areas, and under continuing pressure.

Piecemeal measures to afford farmers relief, such as preferential assessment, will be helpful but not decisive. The simple fact is that farming, as an economic venture, cannot compete with alternative uses of land for housing or commercial purposes.

To place farmers on a par with other land users, a Pennsylvania Agricultural Reserve (PAR) is proposed. The heart of the PAR program would be long-term contracts providing farmers necessary technical and financial assistance in return for their assurance that productive farmlands remain in agricultural use.

A State-wide program, PAR would (1) define, identify, and map farmland that should remain in agricultural production, and (2) encourage farmers to continue operating such lands by offering them a wide range of PAR contract benefits, to maximum limits. Contracts would run from five to fifteen years and be binding agreements, but transferable to other farmers. Counties and communities would be encouraged to enter into supplementary contracts to provide farmers in their areas with additional benefits.

The strength of the PAR concept is its flexibility. Agreements could include all forms of technical and financial assistance presently available to farms and farmers in the State, and such additional benefits as may be authorized by new legislation. Benefits could include tax relief, low-interest loans, technical assistance, and assurances that state funds would not assist in constructing public facilities that increase development pressures.

So long as farmland conservation efforts are temporary, sporadic, and uneven, the loss of productive Pennsylvania farmlands will continue. PAR offers a way to package and deliver needed assistance on a consistent and equitable basis that gives no unfair advantage to either the farmer or the taxpayer.

FLOODPLAIN MANAGEMENT

Pennsylvania has over 45,000 miles of flowing waters that periodically flood their banks. In 1972 most did, with unprecedented damage, dislocation, and human misery.

Past emphasis on structural controls — dams, dikes, and levees — has proved inadequate. The Commonwealth and its communities must face up to the realization that only a comprehensive flood control and floodplain management program can end such losses. To this end, a two-pronged floodplain management program is proposed for dealing separately with the problems of developed and undeveloped floodplain areas.

As a first step, flood-prone lands would be defined, located, and mapped. Depending upon their characteristics, one of two management approaches would be pursued:

1) In developed floodplains, funds and assistance for voluntary relocation of persons and businesses would be supplied; planning assistance (including preparation of model ordinances) would be extended to floodplain communities; and land use controls enforced consistent with the capacity of existing flood control structures.

2) In undeveloped areas, public acquisition or control would be promoted. Where acquisition was necessary, management of undeveloped floodplains by local governments would be encouraged.

Other recommendations include:

- floodplain management on a watershed basis; and
- enactment of a state-wide flood control and floodplain management program, along lines of Pennsylvania Senate Bill 1.

MOUNTAINS

While not high or massive, the ridges of the Alleghenies and the deeply dissected northcentral plateau have shaped the Commonwealth's settlement pattern, located its transportation corridors, and deeply influenced

its cultural and economic development. They are now feeling the full impact of technology, population increase, and economic development.

Unfortunately, mountains magnify the consequences of misuse: land disturbances tend to be more visible, severe, and lasting. And while there is still a vast area of relatively unspoiled, rugged country in the Commonwealth, these regions are under heavy pressure to supply coal, provide sites for housing, and develop more stable economic anchors. The challenge is to manage these lands to meet both needs. Recommendations are made with respect to the major mountain land uses:

Mining

Pennsylvania's mined lands reclamation laws are among the best in the Nation. However, reclaiming the hundreds of thousands of acres disturbed before these laws came into operation is a continuing problem. To deal with it, land reclamation efforts through Operation Scarlift should be extended, and reclamation efforts directed toward complete treatment of individual drainages.

Second-Home Developments and Lot Sales

Too often lots for second-homes are sold in areas where water, sewer, and other essential public services are not and may not become available. Action to protect consumers is rare, and zoning, sub-division regulations, or other land use controls usually are inadequate or non-existent. The major burden of controlling such sales falls at the county and community level, but State legislation to protect consumers and to preserve environmental quality should be enacted at an early date.

Second-home developments present different concerns. Over time, such communities tend to become indistinguishable from "first home" developments, and therefore, should be planned and developed under criteria as stringent as those for any other housing. Special attention should be paid to water pollution; sewage disposal; soil erosion and sedimentation; highway congestion; availability of public services; effect on scenic, aesthetic, and historic value; and compatibility with official county or local plans.

Public Development

In the mountains, roads and bridges are especially important in determining where development will take place. A sensitive and skillful eye to the design of bridges, culverts, and road cuts can do much to

preserve landscapes that are likely to be of great economic as well as aesthetic value to these regions.

A network of scenic and historic roads is recommended as a most fitting observance of the Nation's Bicentennial by the Bicentennial State.

The Good Life

Recommendations are made with respect to the management and development of State parks and forests. Emphasis is placed on the development of recreation opportunities; educating people to better understand the natural world around them; and acquiring key tracts essential to the protection and promotion of State park, forest, and game lands.

THE NORTHCENTRAL HIGHLANDS: A SPECIAL OPPORTUNITY

It is within the grasp of the Commonwealth to protect for all Pennsylvanians the last major region between the urbanized east and the industrial midwest that is still largely unspoiled and undeveloped. But the opportunity will fade quickly if random development is not halted.

The Northcentral Highlands — bounded on the south by Interstate 80, on the north by Route 6 (or the New York State line), on the west by Route 219 (or the Allegheny National Forest), and on the east by Route 220 (or the eastern border of Bradford, Sullivan, and Lycoming counties) — is a vast region that includes many of the outstanding natural areas in the State. The Pine Creek Canyon, the watershed of the Loyalsock, the Hammersley, Quehanna, and other major wilderness opportunities, are all within the Northcentral Highlands. Fish and game are plentiful. Outdoor recreation opportunities are abundant.

Much of the area — more than 2-1/2 million acres — already is in State ownership. Halting all development on other lands is not necessary. But early action by the State to recognize this region's assets, and to secure them permanently, is essential. A four point program for this purpose is proposed.

CRITICAL ENVIRONMENTAL AREAS: LANDS OF SPECIAL VALUE

These unique or rare areas can be reproduced with difficulty, if at all. The basic objective, therefore, must be to protect their special natural or cultural values. In Pennsylvania, critical environmental areas include

wilderness sites; natural areas; historic and cultural sites and buildings; and wetlands and coastal areas.

WILDERNESS

No natural resource management issue has been more volatile, emotion-ridden, or bitterly-contested than that of wilderness protection and preservation. To some, wilderness is waste; to others, essential spiritual nourishment.

Protection of some wilderness sites in Pennsylvania is proposed. It is recommended that areas be selected on the basis of the experience they can provide, rather than on inflexible standards of former use or condition.

Management recommendations include:

- preparation of an atlas of potential and designated wilderness sites, and keeping it current;
- reaching decisions promptly on sites already identified for wilderness values;
- protection of the three major wilderness areas still available in Pennsylvania; and
- restricting use as necessary to protect wilderness values.

NATURAL AREAS

Pennsylvania contains a diversity of plant and animal communities unequaled in most other states. To preserve this endowment, a system of natural areas is recommended that illustrates the wide variety of flora, fauna, and geology indigenous to the Commonwealth.

Natural area criteria are presented, including site characteristics, and means for ranking potential areas on the basis of quality, degree of threat, size, availability, and so forth. Recommendations for the development of a Pennsylvania natural area system include:

- linking up public and private efforts;
- establishing a Natural Areas Commission to coordinate public and private efforts, operate a clearing house of information, and raise funds for acquisition and operation of natural areas;
- enactment of a Pennsylvania Natural Heritage Act similar to natural areas statutes that have been adopted in Indiana, Ohio, and elsewhere.

HISTORIC, CULTURAL AND ARCHAELOGICAL SITES

Pennsylvania, the Bicentennial State, has an especially rich heritage. Yet a major portion of the State's historic and cultural places and structures remain unrecognized, improperly cared for, or threatened by incompatible use or development.

Public and private organizations at local levels are the mainstay of historic preservation in the Commonwealth. Often they are ably organized, and reasonably well-financed. What is lacking is a more uniform level of activity across the State, and better communication and coordination among the many organizations. To meet these needs, recommendations are proposed for:

- developing a comprehensive State historic preservation effort along lines suggested by the Advisory Council on Historic Preservations;
- providing the Pennsylvania Historical and Museum Commission with explicit authority to acquire, restore, maintain, or improve historic sites and areas; and
- encouraging counties and communities in rural or less developed areas of the State to seek out and honor examples of Pennsylvania architecture, history, and achievements.

It is also proposed that State legislation require a six-month stay of destruction for any designated historic site or building. Opportunities for preservation could be fully explored during this time.

WETLANDS AND COASTAL AREAS

Pennsylvania has both coastal and inland wetlands. Fresh water wetlands are concentrated in the glaciated northeast and northwestern portions of the State; the coastal zones are the shorelines of Lake Erie, and the lower Delaware coastal zone. Recommendations for the management of these areas include:

- preparation of a unified coastal zone and wetlands program for Pennsylvania within the framework of the State land use program proposed in this report;
- wetlands management based on the understanding that all wetlands and coastal lands are, by definition, critical environmental areas;
- State acquisition of the few major wetlands important as migratory water fowl habitat that are still unprotected; and
- appropriate action by local governments — ordinarily, the county — to adopt protective ordinances for preserving their wetlands.

GROWTH: HOW MUCH, WHAT KIND, AND WHERE

Until recently, growth of nearly any kind was welcomed. Now, concern over pollution, congestion, and "quality of life" challenge the "bigger-better-busier" view. But most would agree that Pennsylvania should have a growth strategy, and that it should assist in:

- controlling large-scale developments of regional impact;
- locating sites for key public facilities;
- guiding growth around areas unsuited to development;
- attracting desirable growth that can build on existing community resources;
- providing adequate housing;
- improving and diversifying transportation systems; and
- assuring recreational opportunities and urban open space.

GUIDING GROWTH: THE STATE ROLE

The Commonwealth already has a great deal of authority for controlling certain kinds of growth through issuance of sewage permits, strip mining permits, and the like. State construction, such as roads and other facilities, also influences growth throughout the Commonwealth.

A system is proposed for instituting a purposeful State effort for guiding the direction and velocity of growth activities of more than local concern. To accomplish this, a State permit program is recommended. Program components would include:

- defining growth of more than local significance;
- adopting uniform standards and requirements;
- initiating swift and equitable review processes and appeals procedures; and
- conducting a continuing review of policies and procedures.

Applications for developments of regional or state-wide concern would be in the form of impact statements. Counties would be responsible for enforcing State criteria and guidelines.

GUIDING GROWTH: THE LOCAL ROLE

Nine out of ten land use decisions will continue to be made at the local level. In making such decisions, four growth issues are of particular concern to local governments:

- growth/no-growth strategies;
- spot and strip development;
- the exercise of local regulatory processes; and
- property tax policy.

The impact of these growth-related issues is considered, and mechanisms for dealing with them suggested.

A GROWTH STRATEGY FOR THE COMMONWEALTH

Over the long haul, the Commonwealth and its communities should try to attract a larger share of more desirable economic activities. To meet keen national competition for non-polluting light industry, service and distribution facilities, and research and development organizations, many Pennsylvania communities will have to demonstrate that they are attractive places in which to live and raise families.

Current emphasis on conventional economic development assistance — largely roads, water, and sewer systems — does not reach the needs of many Pennsylvania localities for schools, hospitals, community centers, libraries, parks, and so forth. To provide such facilities, it is recommended that the State establish a community improvement revolving fund.

Rapid urbanization continues in some areas, dampened at present by a declining national economy. In these localities, the need is to achieve a fair balance between economic and market forces on the one hand, and on the other, to protect the environment, preserve natural beauty, and improve the quality of life. Means for striking this balance are proposed, including:

- the intelligent application of environmental constraints to help locate sites for particular uses, such as housing and other necessary development; and
- better policy coordination to assure that State and Federal programs do not work at cross purposes.

The application of carrying capacity as a growth determinant in Pennsylvania is also explored.

INSTALLING AND OPERATING A PENNSYLVANIA LAND USE PROGRAM

What organizational structure and administrative apparatus are best suited to a Pennsylvania land use program? How should the governments involved share the task? The report advances the following conclusions and recommendations:

- Most land use planning in Pennsylvania is now entrusted to local governments, and should remain so. However, the large number of governmental units has resulted in fragmented decision-making, a lack of coordination, and uneven performance across the State. To help correct this, *it is proposed that the State's 67 counties be adopted as the logical building blocks upon which to base local land use planning and regulation.*

  Townships and municipalities would continue to plan and regulate land use, so long as their policies and standards did not evade or undercut basic framework plans and regulations of the county.

- *The Commonwealth commitment to regional planning should be strengthened;* these governmental pivot points could serve as the principal liaison between the State and the counties.

- *The State needs to reassert its authority to regulate land uses of more than local impact.* For this purpose, present State action to regulate land, such as issuance of sewer permits, air quality controls, and so forth, should be organized and directed toward reinforcing a purposeful State growth policy.

- To organize and provide initial leadership to a Pennsylvania land use program, *the Governor should establish a Pennsylvania Land Use Commission with an initial tenure of three years.* Commission responsibilities would include:

  1) preparation of a set of coordinated land use policies for approval of the Governor and the Legislature;

  2) supervision of State agency performance related to such policies;

  3) development of a comprehensive permit system for controlling growth of more than local impact;

4) providing advice to the Legislature and its committees; and

5) insuring that all interests have adequate opportunity to participate in the policy-making process.

The choice of an interim commission to organize and guide the Pennsylvania program during its formative years was based on the need to:

- provide fresh leadership;
- bring a broad viewpoint to the task;
- command the respect of State departments and agencies;
- work harmoniously with the Legislature; and
- enlist wide public support.

It is further recommended that the Commission:

- be an independent body of 12 to 15 members, appointed by the Governor and reporting to him through its Chairman;
- be assisted by a small, highly-trained staff;
- include members of the Legislature, local and regional officials, and private citizens representing a range of interests and regions of the State;
- secure advice and assistance of State departments and agencies through a continuing, formal, interdepartmental land use advisory committee; and
- be established for an initial term of 3 years.

Disappearing farmland, floodplain management, economic stagnation, housing needs, suburban sprawl, mining, and other land use-related problems are of deep concern to many. But that concern is more likely to respond to proposals for action than to initiate them. The Commission can help catalyze and organize a State land use effort. But strong executive leadership will be the indispensable ingredient to the success of a land use program for the Commonwealth.

MEASURING THE STATE OF THE STATE: A PENNSYLVANIA INVENTORY AND INFORMATION SYSTEM

Improvements need to be made in refining data collection and distribution. But adequate information is now available to support the initial phases of a State land use program.

Establishing a flexible, effective, permanent arrangement will require time. Steps in that process should include:

- improving the accessibility of existing data;
- establishing minimum standardization of all data requirements;
- creating a data clearance procedure to eliminate duplication and overlap;
- assembling an initial "bare-bones" state-wide data base to serve as the foundation for a mature State data and information system; and
- establishing a unit in the Office of State Planning and Development for supervision of State data and information systems.

EXPECTATION OF THE LAND: THE PENNSYLVANIA LAND USE ATTITUDE SURVEY

Survey results and interviews with experts suggest that the people of Pennsylvania will support an organized effort for better use of their land and landscapes. But they will insist that a balance be struck among economic imperatives, social needs, and environmental protection.

The respondents singled out the following key land use concerns:

- preserving prime agricultural land;
- managing floodplains;
- siting key facilities; and
- guiding large-scale development.

Most respondents believed that more public regulation of land use is needed, and favored some combination of State and local action. They most strongly favored regulation to:

- control the location of commercial developments along roads;
- protect natural ecosystems and maintain high environmental quality; and
- encourage new development near areas already served by public facilities.

A high proportion of respondents favored action requiring State, county and municipal governments, public utilities, and private developers to file land use impact statements.

Survey results are presented in some detail. While there is substantial diversity between different interest groups, and between the regions of the State, the high level of interest on the part of all respondents was a distinguishing characteristic of the survey. Clearly, Pennsylvanians will respond to a program that seeks better ways of using and conserving the basic land resources of the Commonwealth.

APPENDIX A

METHODS FOR PRESERVING AGRICULTURAL LAND

From 1964 through 1969, the United States lost five percent of its cropland. Pennsylvania's loss was about four times greater than the national rate.

A number of approaches have been suggested to halt farmland disappearance. Most focus on one of three means for inducing farmers to keep their lands in production: assessment and taxation policies; public acquisition; and some combination of incentive and regulation.

ASSESSMENT AND TAXATION POLICIES

The majority of programs now in use for preserving agricultural land involve the tax system. The premise is that lowering the farmer's tax burden will enable him to stay in operation, thereby keeping fertile agricultural lands in production.

There is no question that high taxes are burdensome for the farmer, and that tax and assessment benefits can provide some relief. However, cash-flow shortages, lack of credit, marketing difficulties, and similar problems are usually far more serious concerns; tax and assessment relief is only a partial answer, at best. Moreover, without development restrictions, tax programs may preserve little farmland; the farmer is free to sell his land for any purpose whenever he wishes, and if nearby support services, such as roads and sewers, increase the value of the land, he is likely to be put under great pressure to do so. Thus, assessment and taxation policies can delay development, and ease the farmer's tax burden, but their effectiveness for preserving agricultural lands is limited.

Moreover, lowering farm taxes may result in an inequitable distribution of the property tax among other residents.

Assessment and taxation programs to preserve agricultural lands take many forms. The following approaches are among those best known:

Use-Value Assessment. This approach permits farmland to be assessed for current use, rather than at full-market value. While the farmer's tax burden is eased, there is no guarantee that the land will remain in farm usage. Ordinarily, no penalties are imposed if the land is later developed. Thus, this approach often simply subsidizes speculators.

Classified Property Taxes. Under this approach, property is classified according to current use, and assessed according to its classification. Typical categories include industrial, commercial, residential, agricultural, and open space. Once classified, properties are assessed on a percentage of their fair market value. For example, industrial property may be assessed at 50%, commercial at 25%, and agricultural lands at 15%. One rationale for such classification is that farmland does not require the extensive public service of other land uses, and therefore should not be taxed so heavily.

As with other assessment approaches, this system does not assure that the land will remain in agricultural use. Thus agricultural property held for speculation may benefit from lowered taxes while development plans are being drawn up. Stringent classification and assessment criteria can help reduce this risk.

Deferred Taxation. This approach postpones all or a portion of tax payments so long as land is kept in farming, and may provide penalties if the land is later developed. Penalties may include roll-back clauses, fines plus interest, a percentage of that portion of the sales price that exceeds the value of the land for agriculture, and so forth.

This method offers the advantage of immediately easing the farmer's financial situation, and can be effective where financial hardship is the primary reason for loss of agricultural lands. If the land is later developed, the local taxing authority can recover the taxes. However, the success of deferred taxation depends largely on the penalties employed, since there is no guarantee that the land will not be developed eventually. The method offers a way to delay development, but unless penalties are very stiff, it will not prevent it.

Land Gains and Conveyance Taxes. Under this approach, lands are taxed on a sliding scale, according to the length of ownership. Speculators are thus discouraged from buying farmland and leasing it back to the original farmer for a short term while drawing up development plans. However, when expected profits make it worthwhile, developers will act regardless of increased taxes.

Because short term speculators cannot take advantage of this method, land gains and conveyance taxes can slow the turnover of land, and have been successful in this respect.

Zoning Up Fee. This method permits taxing farmland on current use, but requires payment of a "zoning up" fee when changes in use from agriculture will require public improvements such as roads and sewers. This method does not discourage the owner from selling, and a prospective developer may find it worth his while to buy even with the prospects of higher taxes. It also may serve to undermine existing zoning, since it recognizes that changes in land use will occur.

Zoning. Zoning designates appropriate locations for certain types of land use. It is predicated on the legal requirement to further the public health, safety, or welfare, as, for example, by separating housing from incompatible uses, such as certain industry. However, zoning for the purpose of preserving agricultural lands has not gained clear legal standing. It is subject to legal attack on grounds that limiting use to agriculture constitutes a "taking" requiring compensation, or that the limitation is being used as a device to exclude poor and minority groups from low- and middle-income housing sites.

In theory, agricultural zoning has promise. Classifications would need to distinguish between productive agricultural lands and other open land, and not be easily subject to change. Similarly, variances would have to be much more difficult to obtain than is usually the case now. Under these circumstances, agricultural zoning would make for ease of local land use planning and regulation, provide farmers with lowered assessment rates, and probably be reasonably effective.

Only one state, Hawaii, has implemented state-wide zoning, including an agricultural component. The program has achieved only moderate success, since many variances and changes have weakened it. It is unlikely that any mainland state will initiate such a program; the tradition that zoning is a local responsibility is far too strong.

PUBLIC ACQUISITION

Public purchase is probably the most effective but least used means for guaranteeing the preservation of prime agricultural land.

Fee Simple Acquisition. Public ownership may be accomplished through direct purchase, donation, or dedication. In combination with leaseback arrangements, public ownership can guarantee the continued use of farmland for agricultural purposes.

Canada has successfully employed this approach, with the added feature that lease-holders may purchase the land, if they wish. But low rental rates

give little incentive for such purchase. Instead, farmers tend to lease more land and expand production.

In the United States, public acquisition to preserve agricultural land is rare. Suffolk County, New York, has such a program in operation. Less directly, Federal lands acquired for such purposes as flood control and wildlife management may be kept in agricultural production through lease-back and other rental arrangements.

Purchase of Development Rights and Agricultural Easements. So-called less-than-fee acquisition involves public purchase of only certain rights, such as the right to develop the land for residential or commercial purposes. For example, lands adjoining portions of the Blue Ridge Parkway remain in private ownership, but may only be used for agricultural or pastoral purposes. Scenic easements have been used successfully in California, Connecticut, and elsewhere.

Less-than-fee acquisition can be effective for preserving agricultural lands where development pressure is not too intense. But in many growth areas, development rights are the major value of the land, and acquisition of agricultural easements may be almost as costly as outright purchase.

OTHER APPROACHES

Concern over farmland disappearance has spurred new techniques for keeping lands in productive agriculture. Three approaches are of particular interest:

Transfer of Development Rights. This approach attempts to redistribute development values from one location to another. Thus, owners of lands where development is restricted would be assigned development rights equal to the value lost because of such restriction. In turn, those wishing to build where development was to be permitted would be required to buy development rights in order to build above a minimum density. In this way, development rights transfers seek to compensate owners whose lands have been restricted from development, and guide growth to areas where it is desired.

The development rights transfer is an attractive concept. It employs the market mechanism rather than a control device; meets the problem of so-called "windfall-wipeouts" where one landowner is immensely benefited and another severely damaged by land use regulations; and should result in a permanent restriction on development.

The difficulties are substantial, however. Organizing a "market" for the development rights involves untested approaches. The permanency of the arrangement is also a concern. Important legal questions need to be answered. These issues probably will not be resolved until a development rights transfer program is organized and in operation.

Restrictive Agreements. This approach employs binding contracts in which local governments offer use-value assessments to landowners who agree to keep their land out of development for a designated number of years. Contract provisions may vary, and penalties imposed if the contract is breached. The effectiveness of this approach depends on the length of the contract, the incentive to the landowner, and the kind and amount of penalties imposed.

Agricultural Districts. An agricultural district may be organized by a group of farmers who qualify by meeting standards of productivity, economic viability, and other criteria, and agree to continue farming in return for certain benefits. The program is now operating in New York, and is under consideration by other states.

To establish districts, the agricultural regions of a state are first mapped, and farms inventoried. A percentage of farmers in eligible areas, owning a minimum number of acres, must agree to form a district. The benefits to district farmers include lowered assessments, state tax benefits, special consideration in the location of roads or other facilities to avoid interfering with farm operations, and so forth. In return, farmers agree by contract not to develop their lands. Fines may be imposed if contracts are broken.

By their nature, agricultural districts are best-suited to areas where farming is the dominant enterprise and land use. In such areas, they can serve to strengthen the economic position of farmers, and add to the sense of community which, while intangible, can nevertheless be an important influence on a farmer's resolve to stay on the land. Districts are less likely to be effective in areas subject to heavy and continuing development pressures.

For those wishing further information about the preservation of agricultural land, the following references are recommended:

Economic Research Service, *State Programs for the Differential Assessment of Farm and Open Space Land* (Washington, D. C.: U. S. Dept. of Agriculture), Agricultural Economic Report No. 256, April 1974.

Describes reasons for the adoption of laws for the preservation of agricultural and open space land and provides summaries of individual state laws.

Halpin, Mike, "How Can We Save Open Space?", *People and Taxes* (Washington, D. C.: Public Citizen Tax Reform Research Group), Vol. II, No. 7, July 1974.

One of several articles in this issue that describes and evaluates individual state programs. Also includes a listing of publications and organizations concerned with preserving agricultural lands, and a citizen's guide to action.

Connecticut Citizen Action Group, *Public Act 490: Environmental Benefit or Property Tax Loophole?* (Hartford, Connecticut: CCAG), 1974.

A good analysis of a state program and its operation.

Pennsylvania Environmental Council, "The Impact of Preferential Assessment on Agriculture and Forest Lands," *Issues in Land Use Series*, Monograph Number 2 (Philadelphia: PEC), revised 1975.

APPENDIX B

AN ANALYSIS OF THE PROPOSED NATIONAL LAND USE LEGISLATION – S.268

S.268 – the Land Use Policy and Planning Assistance Act – is the principal national land use policy program proposal considered by Congress during the past five years. It would establish a Federal grant program of $800 million over eight years to assist states in developing and implementing land use programs. The Federal share would represent 90 percent of the cost of the program for the first five years, and 66-2/3 percent for three years thereafter.

Participation by states would be voluntary. If enrolled, however, a state must develop within three years a land use planning process which would be required to specify policies, objectives, inventory methods, provisions for citizen participation, and methods for identifying certain land uses and land areas of regional or state-wide impact. These include:

- Areas of critical environmental concern. Lands of particular fragility and rarity requiring state controls to protect their special values and quality. Examples include natural areas, historic sites, and wetlands.
- Key facilities. Developments such as airports, highway interchanges, and major recreational facilities whose siting induces secondary growth and development.
- Large-scale development. Private developments (shopping malls, subdivisions, etc.) of a certain size or impact.
- Developments of regional benefit. Public facilities, housing, and utilities considered by the state to be of benefit and need to more than one local government.
- Land sales and development projects in rural areas. Major development projects (especially second-home developments) in rural areas.
- New communities.

In addition to the development of a planning process, S.268 would require states to regulate critical landforms and development activities through land use controls. States may exercise this authority in two ways:

1) direct state land use planning and regulation; and
2) local government implementation, based on state standards and review.

S.268 also requires major Federal projects and activities which significantly affect land use to be consistent with state land use programs. Conformance of Federal projects with state programs would be achieved through the A-95 clearinghouse procedure. Those projects found inconsistent with state guidelines and policies could be cut off from further Federal funding.

S.268 passed the U. S. Senate in June, 1973 by a wide margin. A similar measure, H. R. 10294, was defeated in the House in early 1974. Both bills are expected to be re-introduced during the current session of Congress.

References

Hearings before the Committee on Interior and Insular Affairs, U. S. Senate, on S.632 and S.992, Parts I and II (Washington, D. C.: U. S. Government Printing Office, 1971).

National Land Use Policy, Background papers on past and pending legislation and the roles of the executive branch, Congress, and the states in land use policy and planning (Washington, D. C: U. S. Government Printing Office, 1972).

National Land Use Policy Legislation, 93rd Congress: An Analysis of Legislative Proposals and State Laws, Prepared by the Environmental Policy Division, Congressional Research Service, Library of Congress (Washington, D. C.: U. S. Government Printing Office, 1973).

APPENDIX C

GUIDELINES AND STANDARDS OF OTHER STATES

APPENDIX C-1

FLORIDA: GUIDELINES

DEVELOPMENT OF REGIONAL IMPACT

APPLICATION FOR DEVELOPMENT APPROVAL
UNDER SECTION 380.06(6) FLORIDA STATUTES

CONTENT

STATE OF FLORIDA
DEPARTMENT OF ADMINISTRATION
DIVISION OF STATE PLANNING
BUREAU OF LAND PLANNING
660 Apalachee Parkway
Tallahassee, Florida 32304
Form No.DSP-BLP-1-1-73

DEVELOPMENT OF REGIONAL IMPACT

Application for Development Approval Section 380.06(6), F.S.

(FOR OFFICE USE ONLY)
1. Project I.D. _____
2. Project Code No. _____
3. Planning Region _____
4. Date of Receipt _____

STATEMENT OF INTENT

5. The undersigned owner or authorized representative of _____ hereby proposes to undertake a Development of Regional Impact as defined in Section 380.06 Florida Statutes, and in support thereof does herewith submit the following information which is correct to the best of his knowledge.

_____ Date

_____ Signature of Owner or Authorized Representative

PERMIT INFORMATION

6. Attached hereto and made a part thereof is an application for a development permit to _____, Name of City or County

___a. Application for Building Permit
___b. Application for Zoning Change
___c. Application for Variance
___d. Application for Other (specify)

APPLICANT INFORMATION

7. Applicant (Name, address, phone)

8. Authorized Agent (Name, address, phone)

9. Location of Project (Attach metes & bounds description, if necessary).
Section _____
Township _____
Range _____

10. If area is platted, fill in, otherwise omit:
County _____
Official Record Book No. _____
Page No. _____

DEVELOPMENT INFORMATION

11. List all local governments having jurisdiction over the proposed development and land development regulations which they have adopted.

12. List agencies from which approval and/or a permit must be obtained prior to initiation of project. Make attachment for additional entries if necessary.

_____ _____

_____ _____

13. Have you requested a binding letter of interpretation from the Division of State Planning pursuant to Section 380.06(4) F.S.?
___Yes If yes, attach a copy of "Request for Binding Letter of Interpretation"
___No to Division of State Planning and copy of Division's response.

14. Type of Development

15. General Description of Development (Including Size)

PUBLIC HEARING

(FOR OFFICE USE ONLY)

16. Date of Public Hearing(s) Place _____ Date _____

17. Date of Notice of Public Hearing(s) _____ Pursuant to Section 380.06(7)F.S.

APPLICATION INFORMATION

18. In preparing its report and recommendations the regional planning agency shall consider whether, and the extent to which:

A. The development will have a favorable or unfavorable impact on the environment and natural resources of the region;

B. The development will have a favorable or unfavorable impact on the economy of the region;

C. The development will efficiently use or unduly burden water, sewer, solid waste disposal, or other necessary public facilities;

D. The development will efficiently use or unduly burden public transportation facilities;

E. The development will favorably or adversely affect the ability of people to find adequate housing reasonably accessible to their places of employment; and

F. The development complies or does not comply with such other criteria for determining regional impact as the regional planning agency shall deem appropriate.

Region is defined as those uniform State sub-districts which have been established by the Department of Administration under the Comprehensive Planning Act of 1972, Chapter 23, Florida Statutes.

In answering this application the applicant must consider the impact of the proposed development on all of the counties included within the appropriate region.

It is important that all of the requested information be provided and that it be accurate and detailed. Answer all questions unless otherwise specified. If there is any information pertinent to the development which has not been requested in this form, incorporate it in the appropriate section of this application. If a multi-disciplinary approach was utilized in developing the plans for this project, include in the attachments the names of the agencies, corporation or other consultants involved in the process. Also, include a bibliography of the sources of information utilized in answering this application. The written responses should be formatted on 8½ by 11 paper with 1½ inch left margin. Return written response with the entire form.

APPLICATIONS WITH INSUFFICIENT INFORMATION WILL BE RETURNED FOR COMPLETION

One copy of the completed application must be submitted to each of the following: (1) Appropriate Local Government(s) (2) Appropriate Regional Planning Agency (3) The Division of State Planning

A. IMPACT ON THE ENVIRONMENT AND NATURAL RESOURCES OF THE REGION

ENVIRONMENTAL IMPACT

19. Discuss in detail the impact of the proposed development on the following categories prior, during and after construction of the project.

a. Air quality-List emission by types and sources (i.e., particulate dust, etc.)

b. Water quality
   (1) Effect upon water resource
      (a) recharge areas
      (b) water retention areas
      (c) withdrawals from groundwater and resultant
      (d) withdrawals from surface water
   (2) Discharges into surface water
      (a) detergents and solvents
      (b) fuel and oil
      (c) sedimentation and siltation
         i. dredge and fill operations
         ii. erosion
      (d) surface run-off
      (e) thermal discharges
      (f) sewage effluent
   (3) Discharges into groundwater
      (a) liquid waste
      (b) solid waste
   (4) Creation of water bodies
      (a) wastewater lagoons
      (b) borrow pits
      (c) impoundments

c. Other effects
   (1) Noise
      (a) Are there any applicable federal, state or local noise control standards to which there must be conformance? (e.g., HUD, DOT or Labor Noise Standards, Etc.)
      (b) What are the standards and how will they be met by the developers?
      (c) What study data are available which define the scope of the noise problems to be created by the development? If there are none, are they going to be conducted, and when?
      (d) To what degree has available technology in noise control and abatement been used in the design of the buildings, facilities, etc. in the development?
      (e) What increase over the ambient noise background of the development area will occur when development is operational? Under construction?
   (2) Radiation
   (3) Other considerations

IMPACT ON NATURAL RESOURCES

20. a. What natural resources existing in the area influenced your decision to develop on this location?
    b. Discuss the impact of the proposed facility upon the following:
    (1) Topography
    (2) Natural vegetation
    (3) Animal life
    (4) Aquatic life
    (5) Endangered species
    (6) Soils
    (a) description of the soils
    (b) dust potential of the soils
    (c) erosion potential of the soils
    (d) permeability of the soils
    (7) Lakes, rivers, streams, creeks swamps, marshes and their flood plains
    (8) Historical or archeological sites
    (9) Parks and recreational areas
    c. What are the clearing plans, methods and practices that will be implemented in the construction phases and what procedures will be employed to minimize the amount of clear-cutting or destruction of the natural area and provide for the restoration of the area?

B. IMPACT ON THE ECONOMY OF THE REGION

FISCAL CHARACTERISTICS

21. a. What percentage of the total project cost will be expected to be spent in the region?
    b. What is the anticipated annual development expenditure in the region? Specify amount and type of expenditure (i.e., resources, capital, labor, etc.)
    c. What will be the cost range per unit to the occupant or per unit of service to the user?
    d. Will the development be exempted from property taxes or other taxes?
    e. What will be the estimated tax yield to the municipality, county, and state from this development for each of the next five years?
    f. Will the project receive assistance from federal, state or local funding programs? If so, from what agency and what is the amount?
    g. What will be the extent of displacing residential commercial or industrial facilities existing in the area of the proposed development?
    h. Attach a copy of the market study for the development, if available.

EMPLOYMENT CHARACTERISTICS

22. a. What is the anticipated average number of employees?
    b. Will the employees be found locally or must they be drawn from outside the county or state?
    c. What is the length of employment anticipated (transient or permanent)?
    d. How many shifts per day production schedule are expected and what will be the average number of employees per shift?
    e. Will the work require specialized skills or training? Specify.
    f. Will employees receive training at the facility or at local educational centers? Specify. If training is desired at the educational centers, are the training programs now available?
    g. Give estimated employment according to the following income categories:
    (1) Less than $ 3,999
    (2) $ 4,000 - 7,999
    (3) 8,000 - 11,999
    (4) 12,000 - 15,999
    (5) 16,000 - and over
    h. What is the estimated annual payroll?

USER CHARACTERISTICS

23. a. If someone other than the developer will occupy the proposed facility, indicate:
    (1) Type of occupant (i.e., light manufacturing; professional offices, retail sale, etc.)
    (2) Place from which the occupant will be drawn
    (a) the county
    (b) outside the county but within the region
    (c) out of the region
    b. Is the proposed facility a site for a new company in the county, a new branch of an existing company or a relocation of an existing company? Specify.
    c. Type of customer(s) (i.e., residential, commercial, industrial, recreational, etc.) to be serviced by the proposed facility. Indicate percentage and mixes.

SUBSIDIARY DEVELOPMENT	24. a. What types of development not included in the project plans and not in existence in the surrounding area may be anticipated as a result of the proposed project? b. Industrial linkages - What supplier and other supporting industry (ies) are required within the region by the proposed development? c. Which portion of these suppliers and supporting industries are currently available in the region? d. How does this development modify the potential in economic growth of the area?

C. IMPACT ON THE PUBLIC FACILITIES OF THE REGION

SANITARY SEWERS	25. a. Cite amount of sewage expected to be generated by the proposed development and source of treatment facility. b. Will the design of the sewage system insure that all areas of the development have adequate facilities at all stages of the development? Specify. c. How does the development's sewage system relate to the county's sewer and water treatment facilities objectives? d. What assurances will the developer provide that such a system will indeed be completed? Construction? Performance bonds?
STORM WATER DISPOSAL	26. a. Are separate storm and sanitary sewers assured? b. How does the proposed system relate to the county and regional waste water treatment facilities plans and to flood plain zoning requirements of the site and other portions of the watershed? c. Can the developer demonstrate that the storm drainage system will be adequate to handle the run-off from a "five-year storm?" Within the state? Within the drainage area(s) involved? How many acres of the project have been designated as water retention areas? What is the holding capacity of these areas?
WATER SUPPLY	27. a. Cite amount of predicted available water supply that will be required by the proposed development. b. Source of supply (i.e., ground water recharge area, natural lakes, reservoirs) c. Does the developer intend to provide both potable and non-potable water systems? d. Will the system provide a sufficient quantity of water for projected growth plus a reserve for dry periods? e. Will the distribution system insure complete coverage of the service area at required pressures for: (1) Normal peak use and, (2) Fire protection requirements f. How does the proposed water supply relate to plans and policies of local government for water supply systems in the area?
SOLID WASTE	28. a. Cite amounts and types of solid waste expected to be generated by the development and means of collection and disposal. b. If there is to be an on-site waste treatment facility, indicate. (1) Capacity and operation (2) How does it relate to the county and regional solid waste disposal plans?
POWER SUPPLY	29. a. Cite amount of predicted available power supply that will be required by the development and source. b. If there is to be an on-site electrical generating facility, what is its capacity and use?
OTHER PUBLIC FACILITIES	30. a. Discuss provisions included in the proposed development, if any for the following facilities: (1) Communications (2) Educational (3) Emergency (4) Fire protection (5) Health care (6) Cultural (7) Recreational (8) Security (9) Others (specify) b. How does the type, location, size, and distribution of these institutional facilities relate to the county and regional plans and policies for these facilities?

OTHER CONSIDERATIONS

31. a. What considerations have been given to the consistency of the phases of the proposed development with the coverage and capacity of all utilities?
    b. What decrease, extension or expansion of utility services and local, county, or state services will be required by this proposed development?
    c. What alternative power, water, sewer, and solid waste disposal sources or mixes were considered and evaluated in selecting this particular site?
    d. What considerations have been given to the installation of underground common utility trenches?

D. IMPACT ON PUBLIC TRANSPORTATION FACILITIES OF THE REGION

PUBLIC TRANSPORTATION CONSIDERATIONS

32. a. Attach arterial thoroughfare plan of the area where the development is proposed.
    b. What are the levels of services provided by the thoroughfares that serve the proposed development?
    c. For the proposed development, indicate:
        (1) Number of vehicle trips per day expected to be generated
        (2) What are the hours of operation?
    d. How would the predicted traffic pattern of the people using the facility affect the total traffic flow of the area?
    e. Identify the major traffic generators within a one mile radius. Indicate in the map requested in question 32a.
    f. Discuss alternative transportation facilities considered for this development. Include transport services by air, water, rail, highway, etc.
    g. What modifications in the present or planned transportation system will be required for this development?
    h. What is the existing availability of public transportation and related facilities in the area of the proposed development?
    i. What amount of parking spaces, and what type of parking facilities will be provided in the proposed development?

E. IMPACT ON HOUSING IN THE REGION

HOUSING CONSIDERATIONS

33. a. When is construction of the facility anticipated to begin and how long will it last? If the proposed development is not permanent, for how long will it be active on this site?
    b. What percentage of the development permanent employees will be from the local labor force? What percentage will be drawn from outside the county? Will there be any housing included in this development? If so, indicate:
        (1) Amount by type
        (2) Price by percentage of distribution of total units

F. OTHER IMPACTS

GENERAL CONSIDERATIONS

34. a. What is the justification for the need of the proposed development in the region?
    b. What are the reasons for the selection of this site or corridor? What were the alternatives? Why was this site chosen as the best alternative?
    c. What are the proposed stages of development or operation and facility utilization? What are the target dates for each of these? Include date of project completion. If applicable, indicate site size, size development, and capacity of the facility at each stage of development (i.e., floor area, seats, number of beds, storage, students, etc.)
    d. How does the proposed development relate to the existing Comprehensive Development Plan for the Community in which the project is located? Identify any conflicts.
    e. What is the land use classification and zoning pattern contained within a one mile radius of the development?
    f. What will be the total service area (cities, counties, etc.) of the proposed development?
    g. Indicate present population for the proposed service area.
    h. What is the projected population capable of being served at the completion of the project?

34 (Cont.)

i. Is this development classified as a Planned Unit Development (PUD)? If so, attach copy of the plan.

j. Include a recent topographic survey of the area, and an aerial photograph, if available.

SPECIFIC CONSIDERATIONS

35. The questions in this section only apply to the following developments:

AIRPORTS

a. For the proposed development, indicate the current and projected:
   (1) Airport classification
   (2) Annual enplaned passengers
   (3) Annual aircraft operations by type
   (4) Number of runways and length
   (5) Types of aircraft which use the facility

b. New runway or runway extension
   (1) Existing and/or proposed length and width
      (a) number of operations
      (b) types of aircraft using the facility

c. Would the proposed airport provide access to isolated locations where access by road, boat, train, or helicopter is not present, or is the access closed down for one month or more due to flood? Evidence for continued need for access and nonavailability of helicopters must be shown.

d. Attach a copy of the Airport Layou Plan (ALP). Indicate those facilities already in existence and those which are proposed.

e. Discuss flight pattern and noise factors. Attach Noise Exposure Forecast contours in values ranging from 20 to 50 in 5 Noise Exposure Forecast increments.

f. Has the authorization application under the Federal Airport and Airway Development Act of 1970, Title 49 United States Code, Section 1701 et.seq., been approved? I so, attach copy of the application and approval.

ATTRACTIONS AND RECREATION FACILITIES

a. For the proposed development indicate:
   (1) Existing and/or proposed number of permanent seats for spectators (if applicable)
   (2) Type of operation
      (a) single performance facility
      (b) serial performance facility
   (3) Monthly and daily schedule of operations

b. Are any innovative design or construction techniques to be utilized in this project? If so, identify.

SCHOOLS

a. For the existing and/or proposed development indicate:
   (1) Type of support or management (public, private or proprietary)
   (2) Academic organization and programs
   (3) Schedule of facility utilization

b. Students (existing and/or projected)
   (1) Enrollment (comment on the items that apply)
      (a) headcount enrollment:
         i. by quarter
         ii. three-quarter average
         iii. by the year (unduplicated count)
      (b) three-quarter average full time equivalents (FTE)
      (c) student stations

PORT FACILITIES

a. For the proposed development, indicate the current and projected:
   (1) Port classification
   (2) Depth of harbor
   (3) Depth of main channels
   (4) Number of channels and length
   (5) Types of ships which use the facility
   (6) Draft of slips which use the facility
   (7) Amount of lineal feet of berthing space
   (8) Number of terminal facilities

b. Attach a copy of the Seaport Layout Plan. Include harbor area with shipping lanes and intercoastal waterway connections.

SPECIFIC CONSIDERATIONS continued

HOSPITALS

a. For the proposed development, indicate:
   (1) Type of facility planned
   (2) Total number of beds projected at stages and at completion
b. If the proposed facility is to be part of a general medical complex, indicate the other type of related facilities to be provided
c. Has the certificate of need application under Section 381.494 Florida Statutes been approved? If so, attach copy of this application.

PETROLEUM STORAGE FACILITIES

a. For the proposed development indicate:
   (1) Location of tanks throughout the site
   (2) Proximity of tanks to buildings or adjoining properties
   (3) Type of installation
   (4) Storage capacity in barrels (1 barrel = 42 U.S. gallons)
   (5) Number of storage tanks
   (6) Total service area (of cities, counties, consumer points, etc.)
   (7) Proximity of development (in feet) to navigable waters
   (8) Number and name of companies maintaining installations in the facility
   (9) Ownership and lease arrangements
b. What considerations have been given to the support, foundation and anchorage of the tanks?
c. What considerations have been given for the provision of drainage and dikes to prevent accidental discharge of liquid from endangering adjoining property or reaching waterways?
d. What measures will be implemented to prevent and control petroleum spillages?
e. What precautions will be taken to prevent ignition in locations where flammable vapor may be present?

TRANSMISSION LINES

a. Is the transmission line corridor passing through:
   (1) Residential or commercial lands (urban areas)
   (2) State parks, forests, wildlife, management areas and other areas held for uses of this nature
   (3) Historic sites and scenic areas
   (4) Lakes, bays, estuaries and swamps
   (5) Any other area determined to be of high economic or ecological impact.
b. What joint or multiple land uses will be promoted or encouraged in this right-of-way?
c. What precautions will be taken in the proposed development to prevent the possibility of accidentally starting range or forest fires?
d. What provisions will be included in the comprehensive program for maintaining the proposed facility?
e. How many transmission lines circuits are proposed?
f. Give the megawatt thermal and transfer capability each way.
g. What will be the electrical input into the operating district from the proposed transmission line?
h. What is the width of right-of-way clear-cut in feet? State length and total acres of use.
i. Are there plans to share existing transmission line corridors or do plans call for the creation of separate rights-of-way? If plans do not call for the sharing of corridors, state the reasons for not attempting to do so.
j. What is the present total megawatt transfer capability of the transmission lines serving this operating district? How will the proposed transmission lines supplement this amount?
k. Identify alternative corridors which have been investigated when considering this alternative.
l. List the cities and counties over which the proposed transmission lines will cross.
m. Attach a large scale map including the projected path of the transmission lines corridor.

SPECIFIC CONSIDERATIONS continued

ELECTRICAL GENERATING FACILITY

a. What is the present kilowatt demand of electricity within your service area?
b. What is the projected five years kilowatt demand of electricity in your service area?
c. What will be the name plate megawatt generating capability of this facility upon its completion?

MINING OPERATIONS

a. For the proposed development, indicate:
   (1) Type of mining operation
   (2) Yearly schedule of operation
   (3) Estimated area in acres of land surface mined
   (4) Estimated area in acres of surface mined land reclaimed
   (5) Proximity of the mining operation to urban areas
   (6) What chemical processes, if any, are involved in the mining operation?
b. Describe the condition of the land prior to any mining including:
   (1) The uses existing at the time of the application and if the land has a history of previous mining the uses which preceded any mining.
   (2) The capability of the site prior to any mining to support a variety of uses giving consideration to soil and foundation characteristics, topography, and vegetative cover.
c. What will be the amount of removal or disturbance of solid minerals or overburden?
d. What considerations have been given to insuring the maximum effective recovery of the mineral resource?
e. What are the plans for recycling water and waste water renovation?
f. Will the operation require or are there plans to intersect or transfer water from one watershed to another?
g. How many cubic yards of material will be removed by dredging and what will be the disposition of the dredged soil?
h. Reclamation
   (1) What are the plans for reclamation and rehabilitation of the area after completion of each phase of operation? Detail the use which is proposed to be made of the land following reclamation, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses.
   (2) Give a time schedule for the completion of all stages of reclamation.
i. Is the developer leasing the land for the mining operation? If so, give every legal owner of the property (surface and mineral) to be mined.
j. What provisions, if any, have been considered for a program for periodic inspection and maintenance of retaining dikes?

SOURCE: Division of State Planning, *Draft Operating Manual for Developments of Regional Impact*, Tallahassee, Florida, 1973.

APPENDIX C-2

FLORIDA: DEFINITIONS AND STANDARDS

RULES

OF

THE DEPARTMENT OF ADMINISTRATION

ADMINISTRATION COMMISSION

CHAPTER 22F-2

LAND PLANNING

PART II

DEVELOPMENTS PRESUMED TO BE OF REGIONAL IMPACT

22F-2.01 Airports. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

The proposed construction of any airport development project as defined in the Federal Airport and Airway Development Act of 1970, Title 49 United States Code, sections 1701 et. seq., involving the location of a new airport, a new runway or a runway extension.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.02 Attractions and Recreation Facilities. The following developments shall be presumed to be developments of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

(1) Any sports, entertainment, amusement or recreation facility, including but not limited to sports arenas, stadiums, race tracks, tourist attractions and amusement parks, the proposed construction or expansion of which:

(a) for single performance facilities:

i) provides parking spaces for more than two thousand five hundred (2,500) cars; or

ii) provides more than ten thousand (10,000) permanent seats for spectators; or

(b) for serial performance facilities:

i) provides parking spaces for more than one thousand (1,000) cars; or

ii) provides more than four thousand (4,000) permanent seats for spectators.

For purposes of this subsection "serial performance facilities" shall mean those using their parking areas or permanent seating more than one time per day on a regular or continuous basis.

(2) The proposed construction of any facility authorized under state law to conduct pari-mutuel wagering activities; or the proposed expansion of such a facility, which would result in more than a ten percent (10%) increase in parking spaces or permanent seats for spectators.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.03 Electrical Generating Facilities and Transmission Lines. The following developments shall be presumed to be developments regional impact and subject to the requirements of Chapter 380, Florida Statutes:

(1) Any proposed steam electrical generating facility with a total generating capacity greater than one hundred (100) megawatts, or a proposed steam addition to an existing electrical generating facility, which addition has a generating capacity of greater than one hundred (100) megawatts; except that this paragraph shall not apply to a facility which produces electricity not for sale to others.

Generating capacity shall be measured by the manufacturer's rated "name plate" capacity.

(2) Any proposed electrical transmission line which has a capacity of two hundred thirty (230) kilovolts or more and crosses a county line.

Provided, however, that no electrical transmission line shall be considered as falling within this standard if its construction is to be limited to an established right-of-way, as specified in section 380.04(3)(b), Florida Statutes.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.04 Hospitals. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed hospital which has a design capacity of more than six hundred (600) beds, or whose application for a certificate of need under section 381.494, Florida Statutes, shows (1) the statement of purpose and need that such hospital is designed to serve the citizens of more than one county.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.05 Industrial Plants and Industrial Parks. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed industrial, manufacturing, or processing plant under common ownership, or any proposed industrial park under common ownership which provides sites for industrial, manufacturing, or processing activity, which:

(1) provides parking for more than one thousand five hundred (1,500) motor vehicles, or

(2) occupies a site greater than one (1) square mile.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.06 Mining Operations.

(1) The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed solid mineral mining operation which annually requires the removal or disturbance of solid minerals or overburden over an area, whether or not contiguous, greater than one hundred (100) acres or whose proposed consumption of water would exceed three million (3,000,000) gallons per day. In computing the acreage for this purpose, a removal or disturbance of solid minerals or over burden shall be considered part of the same operation if it is all located within a circle, the radius of which is one mile and the center of which is located in an area of removal or disturbed solid minerals or overburden.

(2) As used in this section:

(a) the term "overburden" means the natural covering of any solid mineral sought to be mined, including, but not limited to soils, sands, rocks, gravel, limestone, water or peat.

(b) the term "solid mineral" includes, but is not limited to, clay, sand, gravel, phosphate rock, lime, shells (excluding live shellfish), stone and any rare earths contained in the soils or waters of this state, which have theretofore been discovered or may be hereafter discovered.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.07 Office Parks. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed office park operated under one common property ownership or management, that:

(1) occupies more than thirty (30) acres of land; or

(2) encompasses more than three hundred thousand (300,000) square feet of gross floor area.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.08 Petroleum Storage Facilities.

(1) The following developments shall be presumed to be developments of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

(a) Any proposed facility or combination of facilities located within one thousand (1,000) feet of any navigable water for the storage of any petroleum product with a storage capacity of over fifty thousand (50,000) barrels.

(b) Any other proposed facility or combination of facilities for the storage of any petroleum product with a storage capacity of over two hundred thousand (200,000) barrels.

(2) For the purpose of this section, "barrel" shall mean forty-two (42) U.S. Gallons.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.09 Port Facilities. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

The proposed construction of any water port, except those designed primarily for the mooring or storage of watercraft used exclusively for sport or pleasure of less than one hundred (100) slips for moorings.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.10 Residential Developments.

(1) The following developments shall be presumed to be developments of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed residential development that is planned to create or accomodate more than the following number of dwelling units:

(a) In counties with a population of less than 25,000 – 250 dwelling units

(b) In counties with a population between 25,000 and 50,000 – 500 dwelling units

(c) In counties with a population between 50,001 and 100,000 – 750 dwelling units

(d) In counties with a population between 100,001 and 250,000 – 1,000 dwelling units

(e) In counties with a population between 250,001 and 500,000 – 2,000 dwelling units

(f) In counties with a population in excess of 500,000 – 3,000 dwelling units.

Provided, however, that any residential development located within two (2) miles of a county line shall be treated as if it were located in the less populous county.

(2) As used in this section the term "residential development" shall include but not be limited to:

(a) the subdivision of any land attributable to common ownership into lots, parcels, units or interests, or

(b) land or dwelling units which are part of a common plan of rental, advertising, or sale, or

(c) the construction of residential structures, or

(d) the establishment of mobile home parks.

(3) As used in this section the term "dwelling unit" shall mean a single room or unified combination of rooms, regardless of form of ownership, that is designed for residential use by a single family. This definition shall include, but not be limited to, condominium units, individual apartments and individual houses.

(4) For the purpose of this section the population of the county shall be the most recent estimate for that county, at the time of the application for a development permit. The most recent estimate shall be that determined by the Department of Administration pursuant to Section 23.019, Florida Statutes.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.11 Schools.

(1) The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

APPENDIX C-2 (continued)

The proposed construction of any public, private or proprietary post-secondary educational campus which provides for a design population of more than three thousand (3,000) full-time equivalent students, or the proposed physical expansion of any public, private or proprietary post-secondary educational campus having such a design population, by at least twenty percent (20%) of the design population.

(2) As used in this section, the term "full-time equivalent student" shall mean enrollment for fifteen (15) quarter hours during a single academic semester. In area vocational schools or other institutions which do not employ semester hours or quarter hours in accounting for student participation, enrollment for eighteen (18) contact hours shall be considered equivalent to one quarter hour and enrollment for twenty-seven (27) contact hours shall be considered equivalent to one semester hour.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

22F-2.12 Shopping Centers. The following development shall be presumed to be a development of regional impact and subject to the requirements of Chapter 380, Florida Statutes:

Any proposed retail or wholesale business establishment or group of establishments operated under one common property ownership or management, such as a shopping center or trade center, that:

(1) occupies more than forty (40) acres of land, or

(2) encompasses more than four hundred thousand (400,000) square feet of gross floor area, or

(3) provides parking spaces for more than two thousand five hundred (2,500) cars.

General Authority 380.06(2) FS. Law Implemented 380.06, 380.10 FS. History–New 7-1-73.

APPENDIX D

PENNSYLVANIA LAND POLICY SURVEY: DATA AND RESULTS

APPENDIX D-1

SAMPLE QUESTIONNAIRE

CODE 050
FILE 072347

PENNSYLVANIA LAND POLICY PROJECT
204 FIFTH AVENUE
PITTSBURGH, PENNSYLVANIA 15222

PENNSYLVANIA LAND POLICY SURVEY

I WE'D LIKE TO KNOW THE RELATIVE PRIORITY YOU ATTACH TO THE FOLLOWING LAND USE PROBLEMS WE FACE IN PENNSYLVANIA. PLEASE RANK THEM IN ORDER OF IMPORTANCE BY WRITING A "1" IN THE BOX BESIDE THE PROBLEM YOU CONSIDER TO BE THE MOST IMPORTANT, A "2" FOR THE SECOND MOST IMPORTANT, AND SO ON FOR ALL 10 CATEGORIES.

(1)	Preserving prime agricultural land	7 ☐ Card 1
(2)	Regulating strip mining	8 ☐
(3)	Protecting floodplains	9 ☐
(4)	Managing forest and woodland resources	10 ☐
(5)	Preserving unique or scientifically valuable natural areas	11 ☐
(6)	Protecting fish and wildlife habitats	12 ☐
(7)	Protecting historic sites	13 ☐
(8)	Providing open space and outdoor recreation opportunities	14 ☐
(9)	Siting key facilities, (e.g., airports, highway interchanges, power plants, sewage treatment plants, etc.)	15 ☐
(10)	Guiding the location of large scale developments, (e.g., industrial parks, large subdivisions, second home developments, large apartment houses/condominiums, etc.)	16 ☐

SEE QUESTIONS ON BACK OF PAGE

II BELOW ARE SEVERAL SUGGESTED METHODS FOR REGULATING LAND USE. CLEARLY NO ONE METHOD WILL SOLVE ALL LAND USE PROBLEMS SUCH AS THOSE LISTED IN QUESTIONS 1-10. HOWEVER, WE WOULD LIKE TO HAVE YOUR VIEW ON THE USEFULNESS OF EACH OF THESE FOR ITS INTENDED PURPOSE. PLEASE MARK PERTINENT BOXES.

		not at all useful	not very useful	moderately useful	very useful	no opinion
(11)	Zoning	17 ☐	18 ☐	19 ☐	20 ☐	21 ☐
(12)	Differential assessment, (e.g., lower assessment for lands in agricultural use.)	22 ☐	23 ☐	24 ☐	25 ☐	26 ☐
(13)	Public acquisition of land.	27 ☐	28 ☐	29 ☐	30 ☐	31 ☐
(14)	Subdivision regulations and building codes.	32 ☐	33 ☐	34 ☐	35 ☐	36 ☐
(15)	Controlling the location of water and sewer lines.	37 ☐	38 ☐	39 ☐	40 ☐	41 ☐
(16)	Controlling the location of roads.	42 ☐	43 ☐	44 ☐	45 ☐	46 ☐
(17)	Tax policies (in addition to the property tax).	47 ☐	48 ☐	49 ☐	50 ☐	51 ☐

III WE WOULD LIKE TO KNOW HOW YOU FEEL ABOUT SOME IDEAS THAT HAVE BEEN SUGGESTED FOR DEALING WITH PARTICULAR LAND USE PROBLEMS. PLEASE MARK PERTINENT BOXES.

		strongly disagree	moderately disagree	moderately agree	strongly agree	no opinion
(18)	Neighboring communities should have the right to review plans for major developments such as shopping centers, high rise apartments, or industrial parks, that are proposed to be located on or near their boundaries.	52 ☐	53 ☐	54 ☐	55 ☐	56 ☐
(19)	More control is needed on the location of commercial developments along roads, such as quick food stands, gas stations, etc.	57 ☐	58 ☐	59 ☐	60 ☐	61 ☐

		strongly disagree	moderately disagree	moderately agree	strongly agree	no opinion
(20)	New development should be encouraged near areas already served by public facilities such as sewers and water, rather than in rural areas where public facilities now are unavailable or in limited supply.	62 ☐	63 ☐	64 ☐	65 ☐	66 ☐
(21)	New towns should be planned and developed to "soak up" growth.	67 ☐	68 ☐	69 ☐	70 ☐	71 ☐
(22)	Other means should be found for financing local facilities & services such as roads & schools, so that communities would not need to rely so heavily on the property tax.	72 ☐	73 ☐	74 ☐	75 ☐	76 ☐
						Card 2
(23)	A state land use policy should give priority to preserving and protecting small towns.	77 ☐	78 ☐	79 ☐	80 ☐	7 ☐
(24)	A principal purpose of a land use policy should be to protect natural ecosystems and maintain high environmental quality.	8 ☐	9 ☐	10 ☐	11 ☐	12 ☐
(25)	A high priority of a land use policy should be to help ensure an adequate supply of housing.	13 ☐	14 ☐	15 ☐	16 ☐	17 ☐

(26) Federal agencies now must file reports explaining the probable environmental, economic, and social impacts of their proposed projects and activities.

Do you think that it would be desirable to require the following to file such a report on the impacts of their proposed projects and activities? Please mark with an X.

	Yes	No	No opinion
a. State	18 ☐	19 ☐	20 ☐
b. Local municipalities & counties	21 ☐	22 ☐	23 ☐
c. Public utilities & large developments	24 ☐	25 ☐	26 ☐

SEE QUESTIONS ON BACK OF PAGE

IV WHICH LEVEL OF GOVERNMENT SHOULD HAVE PRINCIPAL RESPONSIBILITY FOR DEVELOPING AND ENFORCING LAND USE REGULATIONS TO DEAL WITH PROBLEMS LIKE THOSE LISTED IN QUESTIONS 1-10? SHOULD SUCH RESPONSIBILITY BE DIVIDED BETWEEN SEVERAL GOVERNMENT LEVELS, AND IF SO, HOW? PLEASE INDICATE YOUR VIEWS BY MARKING AN X IN THE BOX WHICH BEST EXPRESSES YOUR FEELING ABOUT THE FOLLOWING STATEMENTS.

		strongly disagree	moderately disagree	moderately agree	strongly agree	no opinion
(27)	There should be only local government regulation of land use. (e.g., local municipalities and counties)	27 ☐	28 ☐	29 ☐	30 ☐	31 ☐
(28)	Land use problems are best resolved at the regional government level (e.g., regional planning commissions, etc.)	32 ☐	33 ☐	34 ☐	35 ☐	36 ☐
(29)	Land use regulations should be centralized at the State level.	37 ☐	38 ☐	39 ☐	40 ☐	41 ☐
(30)	Local land uses should be governed by local regulations, and land uses of State concern, such as power plant sites and large scale developments should be governed by state regulation.	42 ☐	43 ☐	44 ☐	45 ☐	46 ☐
(31)	The state should develop land use standards, with enforcement handled by local governments.	47 ☐	48 ☐	49 ☐	50 ☐	51 ☐

V WE'D LIKE TO KNOW HOW YOU FEEL AND HOW YOU THINK THE AVERAGE PENNSYLVANIAN FEELS, ABOUT THE PRESENT LEVEL OF PUBLIC REGULATION OF LAND USE. MARK WITH AN X.

		need less public regulation	about right	need more public regulation	no opinion
(32)	How do you personally feel about the present level of public regulation (such as zoning, subdivision regulations, state pollution laws, etc.)?	52 ☐	53 ☐	54 ☐	55 ☐
(33)	How do you think most Pennsylvanians feel about the present level of regulations?	56 ☐	57 ☐	58 ☐	59 ☐

		not very knowledgeable	moderately knowledgeable	very knowledgeable
(34)	How well-informed do you consider yourself about such regulations?	60 ☐	61 ☐	62 ☐

VI PUBLIC REGULATION OF PRIVATE LAND USE IS OFTEN OPPOSED. WHAT DO YOU THINK ARE THE BASIC REASONS FOR THIS OPPOSITION? PLEASE MARK PERTINENT BOXES WITH AN X.

		least important	less important	moderately important	most important	no opinion
(35)	Concern that land use regulation limits land value.	63 ☐	64 ☐	65 ☐	66 ☐	67 ☐
(36)	Concern that land use regulation is an infringement on personal rights to use and sell land.	68 ☐	69 ☐	70 ☐	71 ☐	72 ☐
(37)	Concern that land use regulation is a threat to jobs.	73 ☐	74 ☐	75 ☐	76 ☐	77 ☐
(38)	Concern about the kinds of controls that would be applied.	78 ☐	79 ☐	80 ☐	Card 3 7 ☐	8 ☐
(39)	Concern about who would administer the controls.	9 ☐	10 ☐	11 ☐	12 ☐	13 ☐
(40)	Belief that there is no land shortage and therefore no need for land use regulations.	14 ☐	15 ☐	16 ☐	17 ☐	18 ☐

VII WHICH OF THE FOLLOWING DO YOU FEEL ARE THE MOST EFFECTIVE METHODS FOR IMPROVING CITIZEN PARTICIPATION IN LAND USE DECISIONS? PLEASE MARK PERTINENT BOXES WITH AN X.

		ineffective	moderately ineffective	moderately effective	effective	no opinion
(41)	Public hearings	19 ☐	20 ☐	21 ☐	22 ☐	23 ☐
(42)	Citizen membership on planning boards or commissions.	24 ☐	25 ☐	26 ☐	27 ☐	28 ☐
(43)	Open all official meetings to the public	29 ☐	30 ☐	31 ☐	32 ☐	33 ☐
(44)	Citizen advisory committees.	34 ☐	35 ☐	36 ☐	37 ☐	38 ☐
(45)	Citizen initiated court suits	39 ☐	40 ☐	41 ☐	42 ☐	43 ☐
(46)	Public announcement of the options being considered during the initial phases of the planning process	44 ☐	45 ☐	46 ☐	47 ☐	48 ☐

SEE QUESTIONS ON BACK OF PAGE

VIII THE MORE WE KNOW ABOUT YOU THE BETTER WE CAN CLASSIFY THE ANSWERS TO THIS SURVEY, SO PLEASE ANSWER AS MANY OF THESE CLASSIFICATION QUESTIONS AS YOU CAN.

(1) Your county is _____

49 50 ☐☐ For office use only.

(2) Your home is located in (Mark one)

City

51 ☐ under 5,000
52 ☐ 5,000 - 50,000
53 ☐ over 50,000
54 ☐ suburbs
55 ☐ farm
56 ☐ rural non-farm

(3) How long have you lived there:

57 ☐ less than 1 year
58 ☐ 1 - 5 years
59 ☐ 5 - 10 years
60 ☐ more than 10 years

(4) What is your age bracket?

61 ☐ under 18
62 ☐ 18 - 24
63 ☐ 25 - 34
64 ☐ 35 - 44
65 ☐ 45 - 54
66 ☐ 55 - 64
67 ☐ 65+

(5) In what capacity are you principally concerned with land use? If you are in one or more of these categories, please indicate the relative importance of these categories to the way you answered this survey: Put a "1" in front of your most significant land use interest category, then a 2, 3, 4, etc., for any others that might apply to you.

68 ☐ farmer
69 ☐ builder/developer
70 ☐ landowner
71 ☐ concerned citizen
72 ☐ sportsman
73 ☐ conservationist
74 ☐ businessman
75 ☐ architect/engineer/planner
76 ☐ public official
77 ☐ other: (please specify)
78 ☐ _____

(6) It is useful to our analysis of questionnaire results to know approximate gross family income levels. If you will, we'd appreciate your marking the appropriate group:

79 ☐ less than $5,000
80 ☐ $5,000 - $12,000

Card 4

7 ☐ $12,000 - $20,000
8 ☐ $20,000 - $50,000
9 ☐ over $50,000

APPENDIX D-2

ORGANIZATIONS AND INDIVIDUALS PARTICIPATING IN THE PENNSYLVANIA LAND POLICY SURVEY

	Questionnaire Received	Questionnaire Returned	Response Rate (%)
1. Berks County Planning Commission membership and advisory committees	145	37	25.5%
2. Western Pennsylvania Conservancy membership list	381	86	22.6
3. Tri-County Conservancy membership	243	59	24.3
4. Pennsylvania county planning officials	62	38	61.3
5. Department of Community Affairs Regional Offices	12	9	75.0
6. Pennsylvania Regional Planning Offices	12	4	33.3
7. Miscellaneous contacts	23	9	39.1
8. Pennsylvania Township Association representatives	15	2	13.3
9. Pennsylvania Forestry Association mailing list	268	82	30.6
10. Pennsylvania American Institute of Planners membership	305	114	37.4
11. Bucks County Conservancy membership	200	62	31.0
12. Pennsylvania Fish Commission mailing list	467	84	18.0
13. Economic Development Council of Northeastern Pennsylvania — Regional Policy Conference attendees	290	81	27.9
14. North Central Pennsylvania Economic Development District mailing list	207	54	26.1
15. Pennsylvania Builders Association mailing list	320	57	17.8
16. Allegheny National Forest mailing list	85	56	65.9
17. Citizens' Advisory Council to the Department of Environmental Resources — Citizens' group list	332	124	37.3

APPENDIX D-2 (Continued)

	Questionnaire Received	Questionnaire Returned	Response Rate (%)
18. Northwestern Pennsylvania Industrial Developers and Chambers of Commerce	40	7	17.5
19. Northwestern Pennsylvania Rural Development Committee	37	15	40.5
20. Joint Planning Commission of Lehigh-Northampton Counties citizen groups	25	8	32.0
21. Northern Tier Regional Planning and Development Commission membership	8	4	50.0%
22. Pennsylvania Game Commission mailing list	592	53	9.0
23. League of Women Voters of Pennsylvania membership	365	86	23.6
24. Pennsylvania Department of Agriculture mailing list	300	45	15.0
25. Pennsylvania General Contractors mailing list	60	28	46.7
TOTAL:	4,794	1,225*	25.6%

**Includes 21 returned questionnaires unidentified by group.*

APPENDIX D-3

CHARACTERISTICS OF THE RETURN SAMPLE

	RESPONDENTS	
AGE BRACKET	TOTAL	%
UNDER 18	6	1
18 — 24	37	3
25 — 34	276	23
35 — 44	281	23
45 — 54	293	24
55 — 64	213	17
65 +	113	9
TOTAL:	1,219	100%
INCOME BRACKET		
LESS THAN $5,000	24	2
$ 5,000 — $12,000	213	17
$12,000 — $20,000	414	34
$20,000 — $50,000	431	35
OVER $50,000	87	7
TOTAL:	1,169	95%
LENGTH OF RESIDENCY		
LESS THAN 1 YEAR	39	3
1 — 5 YEARS	295	24
5 — 10 YEARS	208	17
MORE THAN 10 YEARS	677	55
TOTAL:	1,219	100%
HOME LOCATION TYPE		
UNDER 5,000 POPULATION	123	10
5,000 — 50,000 POPULATION	220	18
OVER 50,000 POPULATION	162	13
SUBURBS	332	27
FARM	143	12
RURAL NON-FARM	239	20
TOTAL:	1,219	100%

APPENDIX D-4

THE RESPONSES BY UNIFORM REGION

	TOTAL	%
REGION 1	300	24%
REGION 2	100	8
REGION 3	128	10
REGION 4	29	2
REGION 5	58	5
REGION 6	120	10
REGION 7	30	2
REGION 8	93	8
REGION 9	110	9
REGION 10	257	22
TOTAL:	1,225	100%

APPENDIX D-5

HOW THE RESPONDENTS VIEW THEMSELVES*

CATEGORY	TOTAL	%
Farmer	79	6%
Builder/Developer	57	4
Landowner	190	15
Concerned Citizen	386	30
Sportsman	35	2
Conservationist	154	12
Businessman	47	4
Architect/Engineer/Planner	183	14
Public Official	104	8
Other	62	5
TOTAL:	1,297	100%

**NOTE: Each respondent was asked to indicate the principal viewpoint from which he or she answered the questionnaire — i.e., as a conservationist, a farmer, a developer, etc. some individuals checked more than one category.*

APPENDIX D-6

THE KEY LAND USE ISSUES IN PENNSYLVANIA

- The Table below indicates those respondents who ranked each issue as either the 1st, 2nd, or 3rd most important land use concern in the Commonwealth.

LAND USE ISSUE	RESPONDENTS TOTAL	%
Preserving Prime Agricultural Land	741	60%
Regulating Strip Mining	352	29
Protecting Floodplains	339	28
Managing Forest and Woodland Resources	383	31
Preserving Unique or Scientifically Valuable Natural Areas	260	21
Protecting Fish and Wildlife Habitats	313	26
Protecting Historic Sites	110	9
Providing Open Space and Outdoor Recreation Opportunities	246	20
Siting Key Facilities (e.g., airports, highway interchanges, power plants, sewage treatment plants, etc.)	489	40
Guiding the location of large-scale developments (e.g., industrial parks, large subdivisions, second-home developments, etc.)	605	49

APPENDIX D-7

THE KEY LAND USE ISSUES IN PENNSYLVANIA — AS VIEWED BY VARIOUS INTEREST GROUPS

RESPONSES / LAND USE ISSUE	Farmers		Conservationists		Builder/ Developers		Architects/ Engineers/ Planners		Public Officials		Sportsmen		Landowners		Businessmen		Concerned Citizen		Other	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Preserving Prime Agricultural Land	74	93.7	89	57.8	25	43.9	88	48.1	67	64.4	18	51.4	132	69.5	26	55.3	230	59.6	33	53.2
Regulating Strip Mining	23	29.1	53	34.4	17	29.8	44	24.0	26	25.0	10	28.6	61	32.1	14	29.8	109	28.2	18	29.0
Protecting Floodplains	20	25.3	46	29.9	12	21.1	61	33.3	31	29.8	9	25.7	48	25.3	6	12.8	111	28.8	11	17.7
Managing Forest and Woodland Resources	32	40.5	51	33.1	21	36.8	24	13.1	32	30.8	19	54.3	67	35.3	18	38.3	126	32.6	14	22.6
Preserving Unique or Scientifically Valuable Natural Areas	11	13.9	42	27.3	11	19.3	36	19.7	22	21.2	7	20.0	36	18.9	5	10.6	92	23.8	12	19.4
Protecting Fish and Wildlife Habitats	19	24.1	66	42.9	11	19.3	21	11.5	19	18.3	26	74.3	52	27.4	8	17.0	98	25.4	16	25.8
Protecting Historic Sites	9	11.4	9	5.8	10	17.5	12	6.6	7	6.7	1	2.9	19	10.0	4	8.5	43	11.1	4	6.5
Providing Open Space and Outdoor Recreation Opportunities	6	7.6	24	15.6	21	36.8	46	25.1	26	25.0	7	20.0	36	18.9	8	17.0	80	20.7	13	21.0
Siting Key Facilities (e.g., airports, highway interchanges, power plants, sewage treatment plants, etc.)	29	36.7	43	27.9	31	54.4	112	61.2	46	44.2	4	11.4	61	32.1	20	42.6	137	35.5	30	48.4
Guiding the location of large-scale developments (e.g., industrial parks, large subdivisions, second-home developments, etc.)	32	40.5	51	33.1	37	64.9	118	64.5	69	66.3	4	11.4	80	42.1	21	44.7	189	49.0	33	53.2

APPENDIX D-8

WHAT LEVEL OF GOVERNMENT SHOULD REGULATE LAND USE

There should be only local government regulation of land use (e.g., local municipalities and counties).

	STATE	
RESPONSE	TOTAL	%
Strongly Agree	185	15%
Moderately Agree	204	17
Moderately Disagree	291	24
Strongly Disagree	509	42
No Opinion	36	3
TOTAL:	1,225	100%

Land use problems are best resolved at the regional government level (e.g., regional planning commissions).

	STATE	
RESPONSE	TOTAL	%
Strongly Agree	309	25%
Moderately Agree	461	38
Moderately Disagree	256	21
Strongly Disagree	154	13
No Opinion	45	4
TOTAL:	1,225	100%

Land use regulations should be centralized at the state level.

	STATE	
RESPONSE	TOTAL	%
Strongly Agree	164	13%
Moderately Agree	258	21
Moderately Disagree	335	27
Strongly Disagree	417	34
No Opinion	51	4
TOTAL:	1,225	100%

Local land uses should be governed by local regulations, and land uses of state concern, such as power plant sites and large-scale developments, should be governed by state regulation.

	STATE	
RESPONSE	TOTAL	%
Strongly Agree	342	28%
Moderately Agree	436	36
Moderately Disagree	215	18
Strongly Disagree	171	14
No Opinion	61	5
TOTAL:	1,225	100%

The state should develop land use standards, with enforcement handled by local governments.

	STATE	
RESPONSE	TOTAL	%
Strongly Agree	356	29%
Moderately Agree	405	33
Moderately Disagree	218	18
Strongly Disagree	194	16
No Opinion	52	4
TOTAL:	1,225	100%

APPENDIX D-9

WHY PUBLIC REGULATION OF PRIVATE LAND USE IS OFTEN OPPOSED

Concern that land use regulation limits land value.

	STATE	
RESPONSE	TOTAL	%
Most Important	390	32%
Moderately Important	555	45
Less Important	167	14
Least Important	58	5
No Opinion	55	4
TOTAL:	1,225	100%

Concern that land use regulation is an infringement on personal rights to use and sell land.

	STATE	
RESPONSE	TOTAL	%
Most Important	788	64%
Moderately Important	326	27
Less Important	63	5
Least Important	23	2
No Opinion	25	2
TOTAL:	1,225	100%

Concern that land use regulation is a threat to jobs.

	STATE	
RESPONSE	TOTAL	%
Most Important	58	5%
Moderately Important	251	20
Less Important	546	45
Least Important	304	25
No Opinion	66	5
TOTAL:	1,225	100%

APPENDIX D-9 (Continued)

Concern about the kinds of controls that would be applied.

	STATE	
RESPONSE	TOTAL	%
Most Important	450	37%
Moderately Important	534	44
Less Important	166	14
Least Important	32	3
No Opinion	43	4
TOTAL:	1,225	100%

Concern about who would administer the controls.

	STATE	
RESPONSE	TOTAL	%
Most Important	498	41%
Moderately Important	447	36
Less Important	193	16
Least Important	56	5
No Opinion	31	3
TOTAL:	1,225	100%

Belief that there is no land shortage and therefore there is no need for land use regulations.

	STATE	
RESPONSE	TOTAL	%
Most Important	180	15%
Moderately Important	266	22
Less Important	295	24
Least Important	421	34
No Opinion	63	5
TOTAL:	1,225	100%

BIBLIOGRAPHY

PART ONE: A SITUATION REPORT

Clarkson, Thomas, *Memoirs of The Private and Public Life of William Penn*, Vols. 1 and 2, Richard Taylor and Company, London, England.

Comparative Study of Economic Development in 67 Counties in Pennsylvania, Office of State Planning and Development, Harrisburg, Pennsylvania, February 1973.

Conservation of The Natural Resources of Pennsylvania, Department of Environmental Resources, Harrisburg, Pennsylvania, August 24, 1972.

Department of Environmental Resources, *1973 Annual Report*, Harrisburg, Pennsylvania, December 1973.

Department of Environmental Resources, *Environmental Master Plan: Planning Survey Report*, EMP 73-I-02, Harrisburg, Pennsylvania, April 1973.

Environmental Policy Center, *Facts About Coal In The United States*, Environmental Policy Center, Washington, D.C., 1974.

Governor's Committee For the Preservation of Agricultural Land, *Final Report with Recommendations to Governor Raymond P. Shafer*, Pennsylvania Department of Agriculture, Harrisburg, Pennsylvania, December 1969.

1973-1974 Governor's Executive Budget: Vol. 2, Harrisburg, Pennsylvania, 1973.

Klein, Philip S., *A History of Pennsylvania*, McGraw-Hill Book Company, New York, New York, 1973.

Pennsylvania Appalachian Development Plan, Appalachian Regional Commission, 1968.

Pennsylvania Appalachian Development Plan, Supplement for 1974, Volumes I, II, and III, Office of State Planning and Development, Harrisburg, Pennsylvania, July 1973.

Pennsylvania Forests, Vol. 63, No. 4, Issue No. 430, The Pennsylvania Forestry Association, Center Square Press, Inc., Mechanicsburg, Pa., December 1973.

Pennsylvania Land Use Inventory, Cat. No. PE120, League of Women Voters, Philadelphia, Pennsylvania, January 1974.

Pennsylvania Projection Series: Employment, Office of State Planning and Development, Harrisburg, Pennsylvania, January 1973.

_____, *Households.*

_____, *Population and Labor Force.*

_____, *Summary.*

"Pennsylvania", *Encyclopedia Americana,* International Edition, Vol. 21, pp. 518-536, The American Corporation, New York, 1971.

"Pennsylvania", *Encyclopedia Britannica,* Vol. 17, pp. 562-574, Encyclopedia Britannica, Inc., London and Chicago, 1972.

Pennsylvania's Regions: A Survey of The Commonwealth, Pennsylvania State Planning Board, Harrisburg, Pa., 1967.

Rand McNally Standard Reference Map and Guide of Pennsylvania, Rand McNally and Company, Chicago, Illinois, 1969.

Report From the Office of State Planning and Development on the Responses to the Environmental Aspects of the Appalachian Opinion Survey, Office of State Planning and Development, Harrisburg, Pennsylvania.

Ross, Loy H., ed., *Pennsylvania Abstract,* Bureau of Statistics, Research and Planning, Pennsylvania Department of Comemerce, Harrisburg, Pa., 1973.

Small, William E., ed., *Inquiry . . .,* Vol. 1, Number 3, Pennsylvania State University, University Park, Pennsylvania, 1966.

Technical Working Memorandum No. 1: Pennsylvania Economy, Office of State Planning and Development, Harrisburg, Pennsylvania, April 1974.

The Pennsylvania Manual, Volume 100, Department of Property and Supplies, Harrisburg, Pennsylvania, 1970-1971.

The Population of Pennsylvania: A Profile for 1970, Office of State Planning and Development, Harrisburg, Pennsylvania, September 1973.

The Strip Mining of Bituminous Coal in Pennsylvania, Pennsylvania Coal Mining Association, Harrisburg, Pennsylvania, c. 1969.

_____, *No. 2: Manufacturing, Employment, Output and Investment.*

_____, *No. 4: Population Trend and Target.*

_____, *No. 5: Housing.*

_____, *No. 6: Personal Income and Investment.*

_____, *No. 7: Land Requirements.*

_____, *No. 8: Energy, Transportation.*

_____, *No. 12: Environment.*

Tolles, Frederick, "William Penn", *Encyclopedia Americana*, International Edition, Vol. 21, pp. 511-515, The Americana Corporation, New York, 1971.

"William Penn", *Encyclopedia Britannica*, Vol. 17, pp. 559-561, Encyclopedia Britannica, Inc., London and Chicago, 1972.

PART TWO: RESOURCES UNDER PRESSURE

FARMLANDS

"Agricultural Districts," *Cornell Miscellaneous Bulletin 102*, Cornell University, Ithaca, New York, 1974.

Allee, David J. et al., "Toward the Year 1985: The Conversion of Land to Urban Use in New York State," *Special Cornell Series number 8*, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, 1970.

Alston, Fornum, "Preferential Taxation of Agricultural and Open Space Lands: A Proposal for Wisconsin," working paper 8F, The University of Wisconsin, Madison, Wisconsin, December 1972.

Bryant, W. R. and Conklin, H. E., "Legislation to Permit Agricultural Districts in New York: As Amended Through 1973," Dept. of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, December 1973.

"Bucks County Agricultural Study," Pennsylvania Department of Agriculture, Harrisburg, Pa., 1974.

1969 Census of Agriculture — County Data, excerpts obtained from Pennsylvania Department of Agriculture, Harrisburg, Pa.

"Changes Required for Act 515," obtained from Bucks County Conservancy, Doylestown, Pa., 1974.

Conklin, H. E. and Bryant, W. R., "Agricultural Districts: A Compromise Approach to Agricultural Preservation" (unpublished) Cornell University, November 16, 1973.

Conklin, Howard E., "Recent Changes in Governmental Mechanisms for Modifying Rural Land Use Decisions in New York State," Department of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, November 1973.

Conklin, Howard E., "Rural New York State's Agricultural Districts," reprinted from *New York's Food and Life Sciences*, Vol. 5, No. 4, Dept. of Agricultural Economics, N.Y. State College of Agriculture and Life Sciences, Cornell University, Ithaca, N.Y., October-December 1972.

Coon, Margaret, *Summation of State Agricultural Tax Assessment Laws*, Pennsylvania Environmental Council, Inc., Philadelphia, Pa.

1973 Crop and Livestock Annual Summary, CRS-62, Pennsylvania Department of Agriculture Crop Reporting Service, Harrisburg, Pa.

"Differential Assessment of Farmland Near Cities . . . Experience in Maryland Through 1965," (ERS 358), Economic Research Service, U. S. Department of Agriculture, Washington, D. C., October 1967.

"Discussion of Act 442," Bucks County Planning Commission, Doylestown, Pennsylvania, 1973.

"Economic Viability of Farm Areas in New York by County," New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, 1968-69.

"Economic Viability of Farm Areas," State of New York Office of Planning Coordination, Albany, N.Y., May 1969.

"Farmland Tax Assessment," *Environmental Alert to Groups*, Pennsylvania Environmental Council, Inc., Philadelphia, Pennsylvania, May 23, 1974.

Fick, Alvin S., "New York's Farmland, A Program to Help Save Vanishing Rural Life," reprinted from *The Conservationist*, New York State Department of Environmental Conservation, Division of Education Services, Albany, New York, October-November 1972.

Final Report: Committee on the Preservation of Agricultural Land, prepared for the Maryland Department of Agriculture, Annapolis, Maryland, August 12, 1974.

Governor's Committee for the Preservation of Agricultural Land, *Final Report with Recommendations to Governor Raymond P. Shafer*, Pennsylvania Department of Agriculture, Harrisburg, Pennsylvania, December 1969.

1972-1973 Fiscal Report of Activities, Pennsylvania Department of Agriculture, Harrisburg, Pa.

"Food and Population," Report No. 19, The Victor-Bostrum Fund for the Planned Parenthood Federation, Washington, D. C., Summer-Fall 1974.

"Guidelines for Open-Land Acquisition and Preservation at the Local Level in Pennsylvania," Environmental Planning and Information Center of Pennsylvania, Inc., Philadelphia, Pa., August 1972.

Hady, Thomas F. and Sibold, Ann Gordon, *State Programs for the Differential Assessment of Farm and Open Space Land*, Agricultural Economic Report No. 256, Economic Research Service, U. S. Department of Agriculture, Washington, D. C., April 1974.

Halpin, Mike, "How Can We Save Open Space?" *People and Taxes*, Public Citizen Tax Reform Research Group, Washington, D. C., July 1974.

House Bill No. 1234, Printer's No. 1637, The General Assembly of Pennsylvania, Session of 1973, Harrisburg, Pa.

"How Federal Income Tax Rules Affect Ownership and Control of Farming," *Who Will Control U. S. Agriculture?* North Central Regional Extension Publication 37, University of Illinois at Urbana-Champaign, College of Agriculture, Cooperative Extension Service Special Publication 32, July 1974.

Kusler, Jon A., et al., "Rural Land Use in Wisconsin: A Preliminary Description of Problems and Preventive Efforts," Working Paper 8A, the University of Wisconsin, Madison, Wisconsin, December 1972.

Linton, Robert E., "Five Year Tax Exemptions for Improvements in Farm Real Estate: New York State 1972," Dept. of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, September 1973.

"Pennsylvania Farmland and Forest Land Assessment Act of 1974," House Bill No. 1056, Printer's No. 3017, The General Assembly of Pennsylvania, Session of 1973, Harrisburg, Pa.

1974 Policy, Pennsylvania Farmers' Association, Camp Hill, Pa.

"Policy Position Papers" and "Discussion Guides," Pennsylvania Farmers' Association, Camp Hill, Pennsylvania, 1973-1974.

"Preliminary Open Space Covenant Plan," Montgomery County Planning Commission, Norristown, Pa., April 1974.

Proceedings of the Seminar on Taxation of Agricultural and Other Open Land, Michigan State University, April 1-2, 1971.

"Public Act 490: Environmental Benefit or Property Tax Loophole?", Connecticut Citizen Action Group, Hartford, Conn., May 13, 1974.

Rahenkamp, John et al., "A Strategy for Watershed Development . . . that beats the bulldozer by using land-sale profits to preserve greenspace," *Landscape Architecture*, April 1971.

Scholvinch, Johan B., "Land Use Policies: The Preservation of Farmland In An Urbanizing Environment, The Suffolk County Case," paper submitted to Professors Conklin and Allee, Department of Agricultural Economics, Cornell University, April 17, 1974.

Soil Erosion and Sedimentation Control Manual for Agriculture, Pennsylvania Department of Environmental Resources, Harrisburg, Pa., August 1, 1974.

Statement on House Bill 1056 (PN1261) at Millersville State College (including Appendices A, B, and C), Pennsylvania Environmental Council, Inc., Philadelphia, Pa., August 1, 1973.

"Summary of Act 442," Pennsylvania Department of Agriculture, Harrisburg, Pa., 1968.

"Summary of Act 515," Pennsylvania Department of Agriculture, Harrisburg, Pa., 1966.

Summary of the National Conference on Food Policy, Pennsylvania Department of Agriculture, Harrisburg, Pa., 1974.

"Who Will Control U. S. Agriculture?" North Central Regional Extension Publication 32, University of Illinois at Urbana-Champaign, Cooperative Extension Service Special Publication 27.

"Who Will Control U. S. Agriculture?" Six leaflets, North Central Regional Extension Publications 32-1 through 32-6, University of Illinois at Urbana-Champaign, Cooperative Extension Service Special Publication 28.

FLOODPLAINS

Act 112, State of Arkansas, Sixty-ninth General Assembly, 1973.

Arnold, Maurice D., "The Flood: A Man-made Disaster" U. S. Dept. of Interior.

"Areas Eligible for Flood Insurance," U. S. Dept. of Housing and Urban Development, Federal Insurance Administration, Jan. 31 and May 31, 1974.

Bernstein, George K., "A Turning Point," *Water Spectrum*, Dept. of the Army, Corps of Engineers, Vol. 6, No. 2, 1974.

"Citizens Speak Out on the Environmental Plan," a special report, New York State Dept. of Environmental Conservation, Albany, N. Y., September 1, 1973.

Clark, John, *Coastal Ecosystems*, The Conservation Foundation, Washington, D. C., March 1974.

"Coverage Analysis Theory," obtained from Wissahickon Valley Watershed Association, Ambler, Pa., August 1973.

Delaware River Basin Compact, Delaware River Basin Commission, Trenton, New Jersey, January 1967.

"Disaster Relief Act Amendments of 1974" Summary by Economic Development Council of Northeastern Pennsylvania, Avoca, Pa., April 1, 1974.

"Federally Funded Disaster Projects in Pennsylvania," Regional Office, Pennsylvania Department of Community Affairs, Pittsburgh, Pa., October 30, 1973.

Flood Disaster Prevention Act of 1973, Public Law 93-234, 93rd Congress, December 31, 1973.

"Flood Disaster Protection Act 1973, H. R. 8449" (section by section Summary, Fact Sheet, and General Summary), Dept. of Housing and Urban Development, Washington, D. C.

"Flood Insurance . . . How to Get It," Pennsylvania Department of Community Affairs, Harrisburg, Pa.

Flood Plain Information Regional Report: Berks, Lehigh, Northampton, Office of State Planning and Development, Harrisburg, Pennsylvania, March 1974.

———, *Capital Region Planning and Development Agency.*

———, *Northern Tier Regional Planning and Development Commission.*

———, *Southern Alleghenies Planning and Development Commission.*

Flood Plain Information Reports, 38 separate volumes, prepared for the Pennsylvania Department of Environmental Resources, through December 1973.

Flood Plain Management, U. S. Army Engineer District, Pittsburgh Corps of Engineers, Pittsburgh, Pa., June 1967.

"Flood Plain Management: The Prospects for Pennsylvania," Pennsylvania Environmental Council, Inc., Philadelphia, Pa., November 1973.

Flood-Proofing Regulations, Office of the Chief of Engineers, U. S. Army, Washington, D. C., June 1972.

"Flood Recovery Issue," *Pennsylvania Dept. of Community Affairs Report*, Pennsylvania Department of Community Affairs, Harrisburg, Pa., February 1973.

Floods and Flood Warnings, U. S. Dept. of Commerce, Environmental Science Service Administration, Government Printing Office, Washington, D. C., 1969.

Goddard, Maurice K., Statement before the House Committee on Local Government, Hearings on Senate Bill 1122, Pennsylvania Flood Disaster Prevention Act, Harrisburg, Pa., October 23, 1974.

"Important Dates Relating to Flood Insurance Program," U. S. Dept. of Housing and Urban Development, Federal Insurance Administration, Washington, D. C.

Inventory, Water and Related Land Studies Catalog, Ohio River Basin Commission, Cincinnati, Ohio, August 1973.

National Flood Insurance Program, U. S. Dept. of Housing and Urban Development, Washington, D. C., January 1974.

"Nature Owns the Floodplain," *PP and L Planner*, Pennsylvania Power and Light Company Marketing Dept., Allentown, Pa., 1973.

Newsome, W. Roy, "A Summary of Damages Caused In Pennsylvania by Tropical Storm Agnes," *Dept. of Community Affairs Reports*, Pennsylvania Department of Community Affairs, Harrisburg, Pa., June 1974.

"Pennsylvania State Land Use and Coastal Zone Programs," Pennsylvania Office of State Planning and Development and Department of Environmental Resources, Harrisburg, Pa., March 1974.

Phippen, George R., "On a Flood Plain, Can a Right go Wrong?" *Water Spectrum*, Vol. 6, N.1, Dept. of the Army, Corps of Engineers, 1974.

Potomac River Basin Advisory Committee, *Potomac River Basin Compact*, Washington, D. C., October 1968.

"Questions and Answers: Federal Flood Insurance Program," *HUD News*, U. S. Dept. of Housing and Urban Development, Washington, D. C., February 1, 1974.

Regulation of Flood Hazard Areas to Reduce Flood Losses, Volume one, Parts I-IV, United States Water Resources Council, Washington, D. C., 1971.

Regulation of Flood Hazard Areas to Reduce Flood Losses, Volume two, Parts V-VI, United States Water Resources Council, Washington, D. C., 1971.

"Rules and Regulations of the Department of Natural Resources," (chapter seven, relating to Statewide Standards and Criteria for Management of Floodplain Areas of Minnesota), Dept. of Administration, St. Paul, Minn., 1970.

Senate Bill 1122, Pennsylvania General Assembly Session of 1973, Printer's No. 2236, and 2219, Harrisburg, Pa.

Senate Bill 1122, Summary and Analysis by the Economic Development Council of Northeastern Pennsylvania, Avoca, Pa.

Senate Bill 1122, "The Proposed Pennsylvania Flood Disaster Prevention Act," Bureau of Enforcement, Pa. Dept. of Environmental Resources, Harrisburg, Pa.

Sheaffer, John R., *Introduction to Flood Proofing, An Outline of Principles and Methods*, Center for Urban Studies, the University of Chicago, Chicago, Illinois, April 1967.

"Suggested Ordinance Provisions To Be Used in Compliance with Sections 1910.3 (a), (b), (c), and (d) of The National Flood Insurance Program Regulations for Building Permits, Zoning, Subdivision and Land Development Ordinances and Building Codes," obtained from Dept. of Community Affairs, Bureau of Planning, Harrisburg, Pa., October 1973.

"Summary of Major Legislation and Activities Related to Land-Use and Coastal Zone in New York State," New York State Office of Planning Services, Albany, N. Y.

"Title 24 revised as of April 1, 1973" (National Flood Insurance Program), Department of Housing and Urban Development, reprinted from Code of Federal Regulations, Washington, D. C.

United States Army Corps of Engineers, *Guidelines for Reducing Flood Damages*, U. S. Government Printing Office, Washington, D. C., 1972.

United States Department of the Army, Pittsburgh District Corps of Engineers, *Flood Insurance Study: Union Township, Pennsylvania*, Pittsburgh, Pa., December 1972.

"Water Resources Investigations in Pennsylvania," United States Geological Survey, Department of the Interior, Harrisburg, Pennsylvania, 1974.

MOUNTAINS

Appalachian Regional Commission, *Appalachia*, Volume 8, Number 2, Washington, D. C., October-November 1974.

Beck, Michael, Cannelos, George, Clark, John, Curry, William and Loehr, Charles, "Pennsylvania Mountain Landforms: A Case For Regional Planning," (unpublished, in partial fulfillment of Masters' Degrees, Department of Landscape Architecture and Regional Planning, University of Pennsylvania, Philadelphia, Pennsylvania), October 1974.

Department of Environmental Resources, *Operation Scarlift: A Progress Report*, Harrisburg, Pennsylvania, October 1973.

Department of Environmental Resources, *Commonwealth of Pennsylvania: The Land and Water Conservation and Reclamation Act*, Harrisburg, Pennsylvania, 1972.

Harenza, John and Lorenzi, Susanne, "The Misuse of Land: Rural Lot Sales and Vacation Homes: Elements of a Pennsylvania Land Policy" (unpublished, Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pennsylvania), 1974.

Joint Planning Commission, Lehigh-Northampton Counties, *Tentative Joint Planning Commission Policy Statements on Selected Recreation Issues*, September 1974.

North Central Pennsylvania Economic Development District, *North Central Pennsylvania Outdoor Recreation: A Policy Statement*, Ridgway, Pennsylvania, October 1974.

Northern Tier Regional Planning and Development Commission, *Preliminary Draft: Proposed Northern Tier Regional Planning and Development Commission Recreation Position Statements*, Towanda, Pennsylvania, October 1974.

Northwest Pennsylvania Regional Planning and Development Commission, *Proposed Summary of The Northwest Pennsylvania Regional Recreation Study*, Erie, Pennsylvania, 1974.

Outdoor Recreation Horizons, Prepared for the Pennsylvania Department of Forests and Waters, Harrisburg, Pennsylvania, 1970.

Pennsylvania Housing Finance Agency, *Annual Report October 1974*, Harrisburg, Pennsylvania, 1974.

Robinson, Beverly A., "Strip Mined Lands in Pennsylvania: A Brief Review of the Problem," (unpublished, Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pennsylvania), July 1974.

Shands, William, *The Subdivision of Virginia's Mountains*, The Central Atlantic Environment Center, Washington, D. C., February 1974.

Endless Mountains Resource Conservation and Development Project Plan, U. S. Department of Agriculture — Soil Conservation Service, Hyattsville, Maryland, 1968.

Endless Mountains Resource Conservation and Development Project, Project Plan Highlights, U. S. Dept. of Agriculture, Hyattsville, Maryland, May 1968.

Susquehanna Economic Development Association (SEDA) Council of Governments, "Local and Regional Recreational Needs in Region 5," *Recreation*, Timberhaven, Pennsylvania, October 1974.

Susquehanna Economic Development Association Council of Governments, *SEDA-COG Tentative Regional Recreation Policy Statements*, Timberhaven, Pennsylvania.

PART THREE; CRITICAL ENVIRONMENTAL AREAS

WILDERNESS

Congressional Hearings on Eastern Wilderness Legislation: House and Senate Interior and Insular Affairs Committees, Washington, D. C., 1974.

Hays, Samuel, Sierra Club, Pennsylvania Chapter, "The Stony Creek Wilderness: A Unique Pennsylvania Asset," Pittsburgh, Pennsylvania.

Nash, Roderick, *Wilderness and the American Mind*, Yale University Press, New Haven, Connecticut, 1969.

Outdoor Recreation Resources Review Commission, *Study Report 3: Wilderness and Recreation — A Report on Resources, Values, and Problems*, U. S. Government Printing Office, Washington, D. C., 1962.

The Conservation Foundation, *National Parks for the Future*, Washington, D. C., 1972.

NATURAL AREAS

Arizona Academy of Science, *Established Natural Areas in Arizona: A Guidebook for Scientists and Educators*, Office of Economic Planning and Development, State of Arizona, 1974.

Center for Natural Areas, *Report 3: Planning Considerations for Statewide Inventories of Critical Environmental Areas: A Reference Guide*, Smithsonian Institution, Washington, D. C., 1974.

Center for Natural Areas, *Selected Resource Inventory and Critical Areas Programs*, Smithsonian Institution, Washington, D. C., June 1974.

Erdman, Dr. K. S. and Wiegman, Paul G., *Preliminary List of Natural Areas in Pennsylvania*, Western Pennsylvania Conservancy, Pittsburgh, Pennsylvania, 1974.

Federal Committee On Research Natural Areas, *A Director of Research Natural Areas on Federal Lands of the U. S. A.*, Washington, D. C., 1968.

Illinois Nature Preserves Commission, *Comprehensive Plan for the Illinois Nature Preserves System, Part I: Guidelines*, Rockford, Illinois, 1972.

Illinois Nature Preserves Commission, *Comprehensive Plan for the Illinois Nature Preserves System, Part II: The Natural Division of Illinois*, Rockford, Illinois, 1973.

Illinois Nature Preserves Commission, *Illinois Nature Preserves: Two Year Report 1971-72*, Rockford, Illinois, May 1973.

Lindsey, A. A., Schmelz, P. V., and Nichols, S. A., *Natural Areas in Indiana and their Preservation*, Lafayette, Indiana, 1969.

New England Natural Resources Center, *Protection and Management of New England's Natural Areas: A Report to the New England Regional Commission*, Boston, Massachusetts, 1973.

New England Natural Resources Center, *Protecting New England's Natural Heritage*, Boston, Massachusetts, 1973.

Ohio Department of Natural Resources, *Preserving Ohio's Natural Heritage*, Columbus, Ohio.

Ohio Department of Natural Resources, *State Nature Preserves*, Columbus, Ohio.

Purdue University, *The Indiana Natural Areas Survey*, Department of Biological Sciences, Purdue University, Lafayette, Indiana.

Tans, William, *Guidelines For Preparing a County Natural Area Inventory*, Scientific Areas Preservation Council, Michigan, February, 1974 (revised ed., T. H. Reed, October 28, 1974).

Tans, William, "Priority Ranking of Biotic Natural Areas," *The Michigan Botanist*, Vol. 13, 1974.

The Nature Conservancy, *Proceedings of the Workshop on Environmental Inventories*, Airlie, Virginia, March 1-2, 1973.

Wisconsin Scientific Areas Preservation Council, *Wisconsin Scientific Areas*, Department of Natural Resources, Madison, Wisconsin, 1973.

HISTORIC PRESERVATION

Advisory Council on Historic Preservation, *A Report to the President and the Congress of the U. S. for the Years 1971-72*, U. S. Government Printing Office, Washington, D. C., 1974.

Advisory Council on Historic Preservation, *Guidelines for State Historic Preservation Legislation* (Historic Preservation Workshop National Symposium on State Environmental Legislation, March 15-18, 1972), Washington, D. C., 1972.

Advisory Council on Historic Preservation, "Protection of Properties and Procedures for Compliance," *Federal Register*, Vol. 39, No. 34, Feb. 19, 1974, Part II, Washington, D. C.

Boards of Historical Architectural Review Act 167, June 13, 1961, amended by Act of the General Assembly No. 24, April 23, 1963, General Assembly of the Commonwealth of Pennsylvania, Harrisburg, Pennsylvania.

Brittingham, George R. Jr., Editor, *The 1970-71 Pennsylvania Manual*, Vol. 100, Dept. of Property and Supplies, Harrisburg, Pa., 1971.

Bureau of Governmental Research, *Plan and Program for the Preservation of the Vieux Carre*, Historic District Demonstration Study, New Orleans, Louisiana, December 1968.

Deans, Thomas, *History and Community Appearance*, Background Study for Union & Snyder Counties, 1973.

"Office of Archeology and Historic Preservation," Presentation to the Secretary, Advisory Board on National Parks, Historic Sites, Buildings and Monuments, April 23-25, 1974.

Pyke, John S. Jr., *Landmark Preservation*, Citizens Union Research Foundation, Inc., New York, N.Y.

National Park Service, *Matching Grant-In-Aid for Historic Preservation Fact Sheet*, United States Department of the Interior, United States Government Printing Office, Washington, D. C.

National Park Service, *National Parks & Landmarks: as of January 1, 1972*, United States Department of the Interior, United States Government Printing Office, Washington, D. C., 1972.

National Park Service, *National Park Service: Organization*, United States Department of Interior, United States Government Printing Office Washington, D. C.

National Park Service, "Register of Historic Places," *Federal Register*, Vol. 39, No. 34, February 19, 1974, Part II, Washington, D. C.

National Park Service, *The Historic American Building Survey: Under Historic Sites Act of 1935-41*, United States Department of Interior, United States Government Printing Office, Washington, D. C., 1973.

National Park Service, *The Historic American Engineering Record*, United States Department of Interior, United States Government Printing Office, Washington, D. C., 1972.

National Park Service, *The National Historic Landmarks Program*, United States Department of Interior, United States Government Printing Office, Washington, D. C., 1970.

National Park Service, *The National Park Service Archeological Program*, United States Department of Interior, United States Government Printing Office, Washington, D. C., 1969.

National Park Service, *The National Register of Historic Places*, United States Department of Interior, United States Government Printing Office, Washington, D. C., 1971.

Pennsylvania State Planning Board, *Project 70: A Plan for Pennsylvania's Outdoor Resources*, Harrisburg, Pennsylvania, 1964.

The Administrative Code of 1929, Act No. 446, April 9, 1929 amended April 28, 1943, Harrisburg, Pennsylvania.

The Historic Preservation Grants-In-Aid Catalog, Public Law 89-665 80 Statutes 915 (1966) (as amended), The National Historic Preservation Act of 1966, United States Department of the Interior, National Park Service, Office of Archeology and Historic Preservation, Division of Grants, Washington, D. C., January 1974.

The 1972-73 Pennsylvania Manual, Department of Properties and Supplies, Harrisburg, Pennsylvania, 1973.

Van Trump, James D. and Ziegler, Arthur P., *Landmark Architecture of Allegheny County, Pennsylvania*, Pittsburgh History and Landmarks Foundation, Pittsburgh, Pennsylvania.

Watson, William K., *Historic Sites Survey*, Commonwealth of Pennsylvania, Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.

WETLANDS AND COASTAL ZONE

Conservation Foundation, *Two Studies of Tinicum Marsh: Delaware and Philadelphia Counties, Pennsylvania*, Washington, D. C., 1970.

Conservation Foundation Letter, *The Wetlands: How Well Are They Protected?* Washington, D. C., September 1974.

Coastal Zone Management Journal, Vol. I, No. 1-3, 1973-1974.

Hearings on the Coastal Zone Management Act, House Merchant Marine and Fisheries Committee, June 22, 23, and 24; August 3 and 5; November 1 and 9, 1971.

PART FOUR: GROWTH, HOW MUCH, WHAT KIND, AND WHERE

National Public Works Investment Policy, A, background papers prepared for the Committee on Public Works, U. S. House of Representatives, 93rd Congress, 2nd Session, U. S. Government Printing Office, Washington, D. C., 1974.

Adirondack Park Agency, *Adirondack Park Land Use and Development Plan*, Adirondack Park Agency, Ray Brook, New York, August 1973.

Administration Commission, *Rules of the Department of Administration*, Supp. No. 30, Chapter 22-F, Department of Administration, Division of State Planning, Bureau of Land Planning, Tallahassee, Florida, 1973.

Arcom, Inc. and Marcon, O'Leary and Associates, Inc., *New Communities in Pennsylvania: A Prototype, Westmoreland County, Pa.* State Planning Board, Office of the Governor, Harrisburg, Pennsylvania, November 1970.

Battelle, Oregon Laboratories, *An Inventory and Evaluation of Areas of Environmental Concern in Oregon*, Battelle Pacific Northwest Laboratories, Richland, Washington, April 1973.

Bryant, Drayton S., "Some Principles and Specifics in Use of Planned Residential Development," AIP-Study Series, Philadelphia, Pennsylvania, December 1971.

Bureau of Land and Water Management, *Developments of Regional Impact, A Summary Report for The First Year, July 1, 1973 through June 30, 1974*, Department of Administration, Division of State Planning, Tallahassee, Florida, September 1974.

Bureau of Land Planning, *Draft Operating Manual For Developments* of *Regional Impact*, Section 380, 06 Florida Statutes, Department of Administration, Division of State Planning, Tallahassee, Florida, September 1974.

Colorado Division of Planning, *Digest of House Bill 1041*, 1041 Technical Bulletin 2, Department of Local Affairs, Denver, Colorado, June 24, 1974.

Colorado Division of Planning, *Excerpts From State Planning Law*, 1041 Technical Bulletin 3, Department of Local Affairs, Denver, Colorado, July 15, 1974.

Colorado Division of Planning, *Identification and Designation of Matters of State Interest: Work Plan Guideline*, including appendix, *Guidelines for Local Master Plans*, 1041 Technical Bulletin 4, Department of Local Affairs, Denver, Colorado, 1974

Colorado Division of Planning, *Suggested Outline: County Work Plan for Identification and Designation of Matters of State Interest*, 1041 Technical Bulletin 1, Department of Local Affairs, Denver, Colorado, June 24, 1974.

Colorado Division of Wildlife, *Guidelines For Identification, Designation, and Administration of Significant Wildlife Habitats and Shorelands of Major Publicly Owned Reservoirs*, Colorado Department of National Resources, Denver, Colorado, October 1974.

Delaware River Basin Electric Utilities Group, *Master Siting Study: Major Electric Generating Projects, Delaware River Basin, 1974-1988*, Delaware River Basin Electric Utilities Group, Pennsylvania and Delaware, May 1974.

Governor's Fact Finding Committee, *Shippingport Nuclear Power Station: Alleged Health Effects*, Departments of Health and Environmental Resources, Harrisburg, Pennsylvania, 1974.

Governor's Science Advisory Committee Panel on New Towns and Cities, *New Towns and Cities for Pennsylvania*, The Commonwealth of Pennsylvania, June 1969.

Harvey, Robert and Clark, W. A. V., "The Nature and Economics of Urban Sprawl," *Land Economics*, Volume XLI, Number 1, February 1965.

"Housing Finance Agency Law," as amended through 1972 (1959 P.L. 1688, as amended 1961 P.L. 1616, 1968 P.L. 914, 1972 Act 282).

Housing Inadequacies Task Force, *Report of The Housing Inadequacies Task Force to the Reappraisal and Development Commission*, Reappraisal and Development Commission, Pittsburgh, Pennsylvania, May 17, 1971.

Krochalis, Richard F., "State-wide Land Use planning," *Urban Land*, Vol. 31, Number 8, Washington, D. C., September 1972.

Marcou, O'Leary and Associates, Inc., with the Economic Development Council of Northeastern Pennsylvania, *New Community Development: Northeastern Pennsylvania*, for the Office of State Planning and Development, Harrisburg, Pennsylvania, March 1972.

Ontario Task Force on the Human Environment, *Toward An Environmental Action Plan*, Ontario, Canada, June 1972.

Pennsylvania Electric Association, "Facts you should know about Electric Power in Pennsylvania, 1974" (3rd edition), Pennsylvania Electric Association, Harrisburg, Pennsylvania, July 1974.

Pennsylvania Power and Light Company, "Forecasted Winter Peak Loads: Capacity and Reserves," Pennsylvania Power and Light Company, Allentown, Pennsylvania, April — July 1974.

Pennsylvania Power and Light Company, *Susquehanna Region Development Guide*, Pennsylvania Power and Light Company, Allentown, Pennsylvania, June 1972.

Pennsylvania State Planning Board, *Pennsylvania New Community Site Survey*, Office of the Governor, Harrisburg, Pennsylvania, May 1971.

Powell, David R., *New Communities For Pennsylvania?*, Department of Community Affairs, Harrisburg, Pennsylvania, June 1970.

Public Affairs Counseling, Division of Real Estate Research Corporation, *Toward a Land Use Planning Process For Alaska*, a report to: Joint Federal-State Land Use Planning Commission for Alaska, Public Affairs Counseling, San Francisco, California, August 1974.

Scott, Randall W., "Exclusionary Land Use Practices, or The Rise and Fall of Exclusionary Zoning," submitted for Presentation at American Institute for Planners, Annual Conference in 1972.

Senate Bill No. 939, proposed "Pennsylvania Land Development Agency Act," Printer's No. 1071, The General Assembly of Pennsylvania, Session of 1971, Harrisburg, Pennsylvania.

Susquehanna River Basin Electric Utilities Group, *Master Siting Study, Susquehanna River Basin: Major Electric Generating Projects, 1974-1988*, Susquehanna River Basin Electric Utilities Group, Pennsylvania, Maryland and New York, March 1974.

The State Historical Society of Colorado, *Guidelines for Identification and Designation of Historical, Natural and Archaeological Resources*, Denver, Colorado, 1974.

U. S. Environmental Protection Agency, Region III, *Valley Forge Area Wastewater Treatment Facility, Chester County, Pa: Final Environmental Impact Statement*, U. S. E. P. A., Region III, Philadelphia, Pennsylvania, September 1974.

PART FIVE: A LAND USE PROGRAM FOR PENNSYLVANIA

LAND USE POLICIES AND PROGRAMS – LOCAL, REGIONAL AND STATE GOVERNMENT

Bosselman, Fred and Callies, David, *The Quiet Revolution in Land Use Control*, Washington D. C., U. S. Government Printing Office, 1971.

Bosselman, Fred, et. al., *The Taking Issue*, Washington, D. C., U. S. Government Printing Office, 1973.

Costonis, John J., *Development Rights Transfer: An Exploratory Essay*, The Yale Law Journal, Vol. 83: 75, 1973.

Costonis, John J., *Space Adrift: Landmark Preservation and the Marketplace*, University of Illinois Press, Champaign, Illinois, 1974.

Council of State Governments, *The Land Use Puzzle*, Lexington, Kentucky, 1974.

Environmental Master Plan: Planning Survey Report, Department of Environmental Resources, Harrisburg, Pennsylvania, April, 1973.

Environmental Quality: The First Annual Report of the Council on Environmental Quality, Washington, D. C., U. S. Government Printing Office, 1970.

_____, *The Second Annual Report of the Council on Environmental Quality*, 1971.

_____, *The Third Annual Report of the Council on Environmental Quality*, 1972.

_____, *The Fourth Annual Report of the Council on Environmental Quality*, 1973.

Land Resource Policies and Programs, State Planning Board, Harrisburg, Pennsylvania, August 1971.

Reilly, William K., ed., *The Use of the Land: A Citizen's Policy Guide to Urban Growth*, Thomas Y. Crowell Company, New York, New York, 1973.

Whyte, William H., *The Last Landscape*, Anchor Books, Garden City, New Jersey, 1970.

Young, Michael, *Toward a Land Use Policy for Pennsylvania: The Challenge of the Seventies*, report prepared for the Western Pennsylvania Conservancy, 1973.

INVENTORY

Barton-Aschman Assoc., Inc., *A Statewide Geographic-Based Land Use Information System*, Prepared for the State of Wisconsin, 1973.

Batelle Columbus Laboratories, *Development of the Arizona Environmental Economic Trade Off Model*, National Technical Information Service, U. S. Department of Commerce, Washington, D. C., 1973.

Becker, P. C., *The Rise and Fall of the Master Parcel File*, Papers from the 9th annual URISA Conference, Claremont College Printing Service, Claremont, California, 1972.

Boeing Computer Services, Inc., *Natural Resource Information System, Vols. I and II*, Seattle, Washington, 1972.

Boeing Computer Services, Inc., *Natural Resource Information System: Design Analysis*, Seattle, Washington, 1972.

Bureau of the Census, *The DIME Geocoding System*, U. S. Government Printing Office, Washington, D. C., 1967.

Calkins, H. C., *An Information System and Accountability Theory of Planning*, Unpublished Ph.D. Dissertation, University of Washington, 1972.

Calkins, Hugh, and Robertson, John L., *The Proposed Washington State Land Information Service*, Submitted for presentation at Confer-In '73, AIP, Atlanta, Georgia, 1973.

Chi, Judy, *A Summary of the CRIP Regional Seminars*, The Institute for Environmental Studies, University of Wisconsin, 1973.

Council of State Governments, *Land Use Policy and Program Analysis Number 2: Data Needs and Resources for State Land Use Planning*, Lexington, Kentucky, 1974.

Dangermond, Jack, *Technical Alternatives for Geographical Information Systems at State/Regional Level*, Environmental Systems Research Institute, Redlands, California, 1973.

Dueker, Kenneth J. and Talcott, Richard, *Land Resource Information: Policy and Technical Issues*, Papers from 11th Annual URISA Conference, Atlantic City, N. J., 1973.

Dueker, Kenneth J. and Talcott, Richard, *Statewide Land Use Analysis and Information Requirements*, The Institute of Urban and Regional Research, University of Iowa, Iowa City, Iowa, 1973.

Fisher, L. T. and Thomsen, R., *Extraction of Resource Data for CRIP*, The Institute for Environmental Studies, University of Wisconsin, 1973.

Grey, Arthur L., and Westerlund, Frank U., *Applications of Remote Sensing in Urban and Regional Planning*, Paper submitted for Confer-In '73. AIP, Atlanta, Georgia, 1973.

Iowa Upper Mississippi Valley Land Use Analysis Laboratory, *A Land Classification Method for Land Use Planning*, Iowa State University Press, Ames, Iowa, 1973.

IRIS: Illinois Resource Information System — Feasibility Study, Final Report, Center for Advanced Computation, Urbana, Illinois, 1972.

Keyes, Dale L. and Basoglu, Umit, *Comparative Analysis of Sampling Designs for Geographical Data*, The Institute for Environmental Studies, University of Wisconsin, 1973.

Kiefer, Ralph W. and Robbins, Michael L., *Computer-based Land Use Suitability Maps*, University of Wisconsin, Madison, Wisconsin, 1972.

Kraemer, Kenneth, "The Evolution of Information Systems for Urban Administration," *Public Administration Review*, Vol. 24, 1969.

Kuhlmey, Edward L. and Laux, David R., *Data and Information: Needs and Availability for CRIP*, The Institute for Environmental Studies, The University of Wisconsin, 1973.

Kusler, Jon A., *Special Data Requirements for Regulating of Lands of Statewide Concern*, The Institute for Environmental Studies, University of Wisconsin, 1973.

Lewis, Philip H., Chairman, *Data Needs and Data Manipulation*, A Faculty Land Use Problem Definition Seminar, The Institute for Environmental Studies, University of Wisconsin, 1972.

LOIS: Land Oriented Information System — A Data Resource for Planning, New Jersey Department of Community Affairs, Trenton, New Jersey, 1973.

LUNR Classification Manual: Land Use and Natural Resource Inventory of New York State, Office of Planning Services, Albany, New York, 1972.

The LUNR Inventory: What it is and how it is used, Office of Planning Services, Albany, New York, 1972.

LUNR Point and Area Data Overlays Ordering Folder, Office of Planning Services, Albany, New York, 1974.

MacDougall, E. Bruce, and Brandes, Charles E., *A Selected Annotated Bibliography on Ecological Inventory and Analysis for Planning*, Center for Ecological Research in Planning and Design, Graduate School of Fine Arts, University of Pennsylvania, Philadelphia, Pennsylvania, 1973.

Miller, Allen H. and Nieman, Bernard J., *Minimizing Environmental Impacts from Transportation: An Application of Remote Sensing and Spatial Computer Data Banks*, University of Wisconsin, Madison, Wisconsin, 1973.

Moyer, D. David and Fisher, Kenneth P., *Land Parcel Identifiers for Information Systems*, American Bar Foundation, Chicago, Illinois, 1973.

NARIS: A Natural Resource Information System, Center for Advanced Computation, Urbana, Illinois, 1973.

Niemann, Bernard J., Jr., *Handbook: Applications of Remote Sensing and Computer Techniques for Recreation Planning*, Department of Interior, Bureau of Outdoor Recreation, Washington, D. C., March 1974.

Runge, Carlisle P., et al., *Symposium: A Survey of Programs for Statewide Land Resource Inventories*, Faculty Land Use Problem Definition Seminar, The Institute for Environmental Studies, University of Wisconsin, 1972.

Tomlinson, R. F., *An Introduction to the Geographical Information System of Canada Land Inventory*, ASP-ACSM Annual Convention, Washington, D. C., March 1967.

Tomlinson, R. F., *Geographical Data Handling, Vols. I and II*, I. G. U. Commission on Geographic Data Sensing and Processing, Ottawa, Canada, 1972.

Tsao, Albert Cheng, *ERGIS Data Bank for Land and Resource Utilization*, University of Wisconsin, Madison, Wisconsin, 1973.

Union-Snyder County Joint Planning Commission, Pennsylvania, *Data System: A General Description for Union and Snyder*, Technical report 1.

EXPECTATIONS OF THE LAND

Committee on Government Operations, U. S. Senate, *Confidence and Concern: Citizens View American Government — A Survey of Public Attitudes*, U. S. Government Printing Office, Washington, D. C., 1973.

Pennsylvania Department of Agriculture, *The Concerns of Pennsylvanians: An Attitude Survey*, Prepared by the Center for Research in the Development Process, Washington, D. C., 1973.

Vermont Natural Resources Council, *Vermont Residents' Attitudes Toward Environmental Pollution and Environmental Legislation*, Prepared by the Becker Research Corporation, Boston, Mass., 1971.

The following supplementary studies also are available:

Laws Which Regulate Land Use in Pennsylvania
by Thomas M. Schmidt

Potential Economic and Fiscal Impacts of a Land Use Policy for the Commonwealth of Pennsylvania
by Benjamin H. Stevens

State Land Use Programs: Issues and Options
by Raymond R. Christman

The Pennsylvania Land Policy Survey: Expectations of the Land

Copies may be obtained from:

The Pennsylvania Land Policy Project
204 Fifth Avenue
Pittsburgh, Pennsylvania 15222