Special Report
Number 6

UNIVERSITY OF WISCONSIN-EXTENSION
GEOLOGICAL AND NATURAL HISTORY SURVEY

Zoning and Financial Incentives for Reservation of Mineral Lands in Wisconsin

1976

PREPARED BY
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
AND
WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY

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Zoning and Financial Incentives for Reservation of Mineral Lands in Wisconsin

with chapters by

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Prepared in Response to a Directive in
Wisconsin Statutes Section 144.83(3)(1973)
that

"On or before July 1, 1976, the department (of natural resources) and the geological and natural history survey shall submit to the governor and legislature a comprehensive state program of mineral resources zoning and financial incentives for the purpose of discouraging those uses of lands which tend to preclude the mining of minerals lying beneath."

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PREFACE

Minerals together with wood and food products provide the basis of the industrial structure and economic welfare of our state and nation. However, in contrast to wood and food products, minerals are unique, for they are fixed in location, quantity, and quality and they are nonrenewable. In addition, their usability depends on whether they can be mined, processed, and sold at a reasonable profit under existing economic, technologic, legal, social, environmental, and land-use constraints.

The Wisconsin Legislature, in recognition of the unique character of minerals and the importance not only of a continuing and a reliable supply of minerals but of the need for environmental protection, in 1973 enacted Chapter 318 relating to regulation of metallic ore prospecting and mining. The legislators recognized that (section 1)

> ...the prospecting for and mining of minerals which are limited in quantity and restricted in occurrence is a basic and essential activity making an important contribution to the economic well-being of the state and nation. At the same time, proper reclamation of the land disturbed by prospecting and mining is necessary to prevent environmental pollution, including undesirable air, land, and water conditions that would be detrimental to property rights, health, safety and general welfare of the citizens of the state. The purpose of this act is to provide that the air, lands, waters, plants, fish, and wildlife affected by prospecting and mining in this state will receive the greatest practical degree of protection and reclamation.

The statute provides for regulation of metallic ore prospecting and mining, and for creation of a mine reclamation council. It also directs (Wis. Stat. sec. 144.83(3) (1973))

> On or before July 1, 1976, the department (of natural resources) and the geological and natural history survey shall submit to the governor and legislature a comprehensive state program of mineral resources zoning and financial incentives for the purpose of discouraging those uses of lands which tend to preclude the mining of minerals lying beneath.

Development of a program of zoning and financial incentives to reserve valuable and useful mineral deposits requires a knowledge of mineral resources and of related geologic, economic, legal, environmental, and social factors. For this reason the Department of Natural Resources and the Geological and Natural History Survey initiated a study to investigate the following:

1. the possible use of zoning or powers of the soil and water conservation districts to discourage those uses of land which tend to preclude the mining of metallic minerals lying beneath and to identify land uses and to investigate the need for more comprehensive and detailed geological and geophysical surveys as a basis for zoning mineral reserves;

2. innovations in land-use policy which have been enacted by state and local governments in attempts to preserve agricultural lands and open space or to guide urban growth and to explore the applicability of these policies to protection of lands consistent with other uses;

3. the nature and extent of any property tax pressure encouraging or forcing premature or tardy development of mineral-bearing land, and alternative tax policies to encourage the most appropriate timing and methods of mining metallic mineral deposits;

4. the financial and zoning implications of the present uncertainty about mineral rights, mineral leasing alternatives, and policy alternatives to overcome any disincentives to metal mining activity; and

5. the financial incentives which might encourage public acceptance of metallic mining operations and possible methods for estimating the economic impact of mining operations on communities.

This report was prepared under a grant from the Department of Natural Resources. It is intended as the basis for legislation directed toward the creation of a comprehensive state program of mineral resources zoning and financial incentives. It describes the need for geological and geophysical surveys to identify areas of high mineral potential and prescribes some alternative zoning and financial incentives that can be applied to discourage those uses of land which tend to preclude mining. The report discusses and makes recommendations relating to these subjects:

--Mineral Resource Potential
--Mineral Rights
--Zoning Incentives for Reservation of Mineral Lands
--Financial Incentives for Reservation of Mineral Lands
--Community Impacts and Public Acceptance of Mineral Development

During preparation of this report several other activities which relate to mining and which tend to overlap and exceed the content and scope of the report were initiated. In late 1975 Governor Patrick J. Lucey requested the Economic Development Coordinating Committee to prepare an overview statement, issued in February 1976, to describe "The Impact of Mineral Resource Development in Wisconsin: Toward a State Policy". Also, near the conclusion of preparation of the present report, initially scheduled for May 30, 1976, the Governor further requested the Economic Development Coordinating Committee to coordinate state agency response to mining in Wisconsin. The request was triggered by a pending open pit metal mine development near Ladysmith, the recent announcements of discoveries of other metallic ore deposits near the cities of Rhinelander and Crandon, and the prospect that more deposits will be found. In response to the Governor's request, a Mining Subcommittee with numerous working groups was established to deal with potential problem areas. The rough drafts of materials prepared for the present report were used extensively by some of these groups and, thus, their final product should be more comprehensive in both scope and detail. In anticipation that the subcommittee will issue separate reports, no attempt was made here to incorporate the results of their work or to consider events which occurred subsequent to May 30, 1976.

Earlier reports of the Geological and Natural History Survey that relate to development of the program are the following:

1. Mineral Prospecting and Mining Transactions (Information Circular No. 23)

2. Model Mineral Reservation and Mine Zoning Ordinance (Information Circular No. 24)

3. Mineral Rights in Wisconsin (Information Circular No. 25)

4. Mineral Resources, Mining, and Land-Use Planning in Wisconsin (Information Circular No. 26).

July, 1976

M.E. Ostrom
State Geologist

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A large number of persons from outside the state, also aided in the study. Among them we would especially like to thank the Arizona Department of Revenue and Legislative Council; the Montant Department of Revenue and Legislative Council; the Alaska Department of Revenue; the Idaho State Tax Commission; Professor Thomas Brightwell, Law Department, University of Denver, Colorado; Robert C. Reed, Mining and Economic Geology Section, Geology Division, Michigan Department of Natural Resources; Kenneth M. Jakes, State Tax Department, and Owen L. Anderson, Assistant Attorney General, North Dakota; James G. O'Brien, State Department of Revenue, and Stevens G. Thoene, Department of Natural Resources, State of Minnesota; State Tax Commissioner, Department of Revenue and Taxation, and Legislative Service Office, State of Wyoming; Mark Adams of Rodey, Dickason, Sloan, Akim and Robb, P.A., Albuquerque, New Mexico; Louis A. Gaecia and Billy G. West, Bureau of Revenue, New Mexico; Department of Taxation, State of Nevada; George E. Reeves, Attorney at Law, San Francisco, California; Robert H. Pascholl, Assessment Students Division, State Board of Equalization, California; Santo Italia, Office of Assessor, Hall of Records, California; and Robert H. Cooper, State Tax Commission, Utah.

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RECOMMENDATIONS

The recommendations presented here were prepared in response to the following directive:

> On or before July 1, 1976, the department (of natural resources) and the geological and natural history survey shall submit to the governor and legislature a comprehensive state program of mineral resources zoning and financial incentives for the purpose of discouraging those uses of lands which tend to preclude the mining of minerals lying beneath. (Wis. Stat., sec. 144.83(3) (1973))

A program such as that described in the statutes must consider the identification of mineral resource potential and mineral reserves, mineral rights ownership and responsibility, potential zoning methods, potential financial incentives, and public awareness and acceptance of the need for mineral development. The recommendations presented here are intended to provide a basis for such a program. They were developed from five separate studies done over a period of six months; these studies form Chapters I through V of this report.

The recommendations reflect recognition by government that

> ...the prospecting for and mining of minerals which are limited in quantity and restricted in occurrence is a basic and essential activity making an important contribution to the economic well-being of the state and nation. At the same time, proper reclamation of the land disturbed by prospecting and mining is necessary to prevent pollution ...that would be detrimental to property rights, health, safety and general welfare of the citizens of the state. (Ch. 318, sec. 1 (1973) Wis. Laws)

Recommendations on Mineral Resource Potential

Mineral-bearing lands are the source of mineral supplies that will be required to satisfy the future demands of society. For this reason, it is important that these lands be identified and protected and that uses be discouraged which would tend to preclude the mining of minerals lying beneath.

In order to determine Wisconsin's mineral resource potential more clearly, it is recommended that the State initiate and expand a program of geological and geophysical surveys and investigations to

1. identify potential mineral-bearing areas before the land is preempted for uses determined to be less critical.

2. encourage private capital investment in mineral exploration and development.

3. inform owners of land and or mineral rights about the mineral resource potential of their lands.

The program should begin in areas of suspected but unknown mineral resource potential. It should have the short-range objective of completing statewide geological and geophysical surveys and commodity studies and the long-range objective of providing for continuous collection, analysis, and evaluation of new information and the application of new technologies, facts, concepts, and theories to developing resource and environmental issues.

Recommendations on Registration of Mineral Rights

The establishment of State policies requiring mandatory registration of mineral rights would significantly reduce some disincentives inherent in the present lack of regulation. Such registration would indicate whether the surface fee owner (owner of the land surface right) also owns the mineral right, and it could eliminate the cost of a title search to determine mineral rights ownership. Such information would be used by individuals to confirm their ownership and by mineral exploration companies to determine with whom they must negotiate.

Five alternative recommendations, which overcome judicial objections to Wis. Stat. sec. 700.30 (1973), are proposed to implement mineral rights registration.

1. Option A: Tax-Delinquency Method. The Legislature would create a subclassification of real property to include all undeveloped subsurface mineral estates, both severed and unsevered, and require recordation. After registration a nominal tax would be levied. Nonpayment of tax would result in forfeiture to the State or county for property tax delinquency. Standard procedures of public auction would follow.

2. Option B: Escheat Method. This alternative to Option A would require all claimants to register mineral rights within a specified time period. Failure to register would lead to the legal presumption of "no known owner". If the taxes were not paid, then the mineral rights would escheat to the State or county. The state or county would have the option to sell or lease the right at public auction.

3. Option C: Custodial-Escheat Method. Any person could petition the state to make a determination whether a specific severed mineral interest should be presumed abandoned. Notification of the owner by registered mail would be required, concurrent with publication of notices in the county in which the property is located, advising that if the property is not claimed within some designated time limit, custody of the property shall default to the state to whom further claims must be directed. Costs involved could be deducted from the proceeds received and the remainder placed in the State General Fund or a special mining fund. The state would retain the property in trust for the true owner.

4. Option D: Dominant-Estate Method. This method would require registration of all subsurface mineral estates, both severed and unsevered, within a designated period of time. Failure to comply would result in revocation of the right by the dominant estate to the holder of title to the subsurface property. The effect of such a taking would likely be reflected through a reduction in the value of title to any mineral property without dominant estate provisions, and thus would create a strong economic incentive for the registration of that estate.

5. Option E: Tax-Incentive Method. A tax reduction would be offered to property owners who could prove they did not own the mineral rights beneath their property. All properties thus disavowed would be designated on the local property rolls as owner unknown. If not claimed within a specified period, all such rights would escheat to the State, which would have the option of offering the properties for sale by public auction or of leasing them for purposes of exploration and mining.

Recommendations on Zoning Incentives for Reservation of Mineral Lands

The analysis of state land-use controls and the application of these controls to the mineral resource situation in Wisconsin leads to the general conclusion that direct regulation of development on mineral lands should be done at the local level. The State does have a strong interest in mineral resources, however, and should take action to insure that this interest is well represented in local development decisions affecting mineral resources. To this end, the following recommendations are offered:

1. The State should encourage, but not require, local land-use planning and zoning in those areas having both a high potential for mineral development and a high potential for conflicts between mining and other types of development.

2. The Wisconsin Geological and Natural History Survey should increase its programs of technical assistance for mineral resource identification in those areas where conflict between mining and other types of development is likely to occur.

3. The State should require that the results of mineral exploration activities be reported to the State Geologist.

Recommendations on Financial Incentives for Reservation of Mineral Lands

Financial incentives for reservation of mineral lands which can be encouraged by government involve primarily considerations of land ownership, especially the mineral right, and of taxes and registration fees on mineral rights. Alternative plans for taxing mineral rights are intended to efficiently and equitably secure tax revenues for the state, consistent with constitutional constraints and with current thinking or economic effects of mineral property taxation on mineral exploration and on methods of timing of mining are:

1. Option A: Property taxation based on market value, or taxation based of a presumptive value, plus adjustment of other property values. Taxation would be accomplished by assigning a presumptive value per acre or a market value determined from actual sales. By this method, the mineral value of Wisconsin lands would be determined through time. Specifically, as mineral rights are bought and sold, a market value would be established.

2. Option B. Market-enforced self-assessment of unsevered mineral rights. Registration of mineral rights and the existence of a market value for them would be a quid pro quo for the zoning of the land for mineral development. More generally, wherever an "arm's length" market value for mineral rights cannot be determined (because of

lack of sales of comparable property), the law could allow the mineral rights owner to set the value for these rights but could require as proof of value that they be offered for sale at this price. First option to purchase might go to the owner of the surface estate.

3. Option C: State use of eminent domain to obtain ownership of unregistered severed mineral rights, with compensation. This option calls for a fundamental change in the structure of property rights and may be regarded as an alternative to state taxation of privately owned mineral rights. The State would exercise its powers of eminent domain and declare that it owns all unregistered mineral rights. Persons claiming ownership of mineral rights would be required to file suit and show proof of title. Unclaimed rights would accrue to the State.

4. Option D: Differential taxation of mineral-bearing land. Article VIII, section 1 of the Wisconsin Constitution suggests the possibility that a differential property tax on mineral rights could be enacted. Such taxation might influence the rate of development of mineral-bearing lands at the county level. High taxation would likely promote development, while low taxation would not.

5. Option E: Property taxation based on Market Value, or taxation based on a presumptive value, plus State confiscation of the mineral estate. Where possible, mineral rights would be assessed like any other real property. If the market value of mineral rights is undetermined, then a per acre presumptive value would be assessed. If either the property tax based on a known market value or the per acre presumptive value were not paid, then the state would put the mineral interest up for sale for delinquent taxes, giving the surface owner first right of refusal.

Recommendations on Community Impacts and Acceptance of Mining Operations

As the underlying and essential element of a program of impact aid, it is recommended that the State establish a formal program of technical assistance to communities which might experience the economic and social impacts associated with mining. The assistance program should help communities estimate the impacts of mining for the construction, operation, and postoperation phases, and should assist communities in planning and enacting policies to minimize the impacts.

Chapter I

MINERAL RESOURCE POTENTIAL

by

M. E. Ostrom*

ABSTRACT

Mineral-bearing lands are the source of mineral supplies that will be required to satisfy the future demands of society. For this reason, the Wisconsin Legislature determined in 1973 that use of such lands for purposes which tend to preclude mining should be discouraged.

Wisconsin has not been a major mineral producer, providing only a limited number of metallic and nonmetallic minerals. However, it does have the potential to produce increased quantities of both metals and nonmetals required by society as evidenced by recent discoveries of deposits containing copper, zinc, lead, gold, and silver near the cities of Ladysmith, Rhinelander, and Crandon in northern Wisconsin. Such activity will have the effect of creating additional jobs related to mining and to mineral processing, fabrication and manufacturing, and marketing and service.

Reserves of metallic minerals such as iron, copper, zinc, and lead are essentially unknown in Wisconsin, although certain reserves of low-grade iron ore and the three deposits mentioned above have been delineated. There appears to be a reasonable potential that more deposits of iron, copper, zinc, and lead will be discovered and developed. Past reconnaissance geological and geophysical surveys have provided incentive for the present minerals exploration by private industry. However, surveys in much greater detail are desirable to encourage exploration and development and to assist the state and local agencies in properly planning for such development. Development of newly discovered deposits will depend in large measure on economic market conditions and on legal, environmental and technological constraints imposed at both local and national levels.

Reserves of nonmetallic minerals such as sand and gravel, crushed stone, clay, and granite are not well defined, although it is rather broadly conceded that Wisconsin possesses large undeveloped deposits of some of these, especially sand and gravel and crushed stone. Thus, the potential for continued and expanded development of these materials is judged to be large. However, detailed geological surveys are necessary to outline specific reserves to satisfy projected future demands.

It is recommended that the state's program of geological and geophysical surveying be expanded to (1) identify potential mineral-bearing areas before the land is preempted for uses determined to be less critical and possibly exclusive; (2) encourage private capital investment in mineral exploration and development; and (3) inform owners of land and/or mineral rights concerning the mineral resource potential of their lands.

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* State Geologist and Director, Wisconsin Geological and Natural History Survey, University of Wisconsin-Extension

INTRODUCTION

We hear daily of the critical energy, environmental, and natural resource problems that confront our society. From the volume of the complaints, we might conclude that doom is upon us, that complete and total collapse is imminent, and that there are no alternatives.

In fact, our earth is rich in natural resources and real and potential energy sources and our environment is far from being totally ravaged. What then is the problem?

Although opinion may vary in detail, there would likely be general agreement that a major problem is the apparent inability of people to cope with the complex interrelationships of natural resources, in this case minerals, and the material, environmental, economic, social, and political attitudes, needs, and demands of society. One method for coping with such complex interrelationships is to establish guidelines in the form of a policy designed to achieve specific mineral resource and related environmental and other goals and objectives. However, such policy must be based both on an understanding of the interrelated parts and a clear definition of development and management goals. For example, for mineral resources it is essential to know the location, quality, and quantity of potential sources of supplies if it is our policy to maximize their use to avoid future shortages and to sustain and improve the quality of life.

It is reasonable to assume that most of us enjoy the high standard of living to which we are accustomed. At least, there are few who would be willing to lower their present standard to any great extent. We would also like to assume that this standard will continue and possibly improve and that our technology will advance and produce, among other things, new and improved methods of communication, transportation, construction, health care and treatment and energy generation. If these are among our goals, then we must begin now to establish the policy best suited for their accomplishment.

We are surrounded by reminders that all necessities and conveniences other than sunlight and the air we breathe come from the earth either directly or indirectly, including food, water, clothing, housing, transportation, communication, health and safety, and comfort. Minerals play a vital role with each of these. However, minerals can only be obtained from concentrations in the earth's crust from which they can be mined, processed, and marketed at a profit under existing economic, legal, environmental, and social conditions and controls.

Mineral commodities are the basis of a system that includes exploration, discovery, acquisition of mineral rights, development, mining, concentration, processing to metal, marketing, manufacturing, and reclamation or abandonment of mine sites. The minerals system has a positive impact on the economy, regionally and nationally, through generation of income and employment, the purchase of goods and services, and the provision of minerals which are the basis of industrial structure and economic welfare.

The orderly development and management of mineral resources requires a policy that provides for a vigorous and healthy minerals system. A mineral policy may be regarded as the sum of government decisions and actions that influence the minerals system and the ways in which that system affects the

economy and society in general. It consists of laws and regulations that directly influence mineral exploration, extraction, and processing, regional development, pollution control laws, environmental concerns, social development programs, and taxation.

Most people have a basic understanding of the concepts of supply and demand, of use and misuse, and of the possible and the impossible. We understand that a given level of existence for human beings and animals has certain resource, environmental, and energy requirements. For example, we have learned from soil studies that the richness of soil varies from place to place and that the amount and quality of vegetation produced on a soil reflects this richness. We have learned that given adequate water, rich soils produce the largest quantities of nourishing grasses, which in turn can support the greatest number of livestock. We have learned, too, that if we attempt to feed too many livestock on poor soil which produces little grass, we destroy both the grass and the soil, and the livestock starve and die. Why then do we hesitate to apply this process of study and analysis to other resource problems for the benefit of people, other creatures, and the environment?

Human beings require an extremely large support system of land and natural resources to sustain their level of existence. Some of the pressures relating to this system are being expressed through current concern over the population explosion and its projected impact on the environment, resources, and energy. We realize that world population is exerting serious demands on our resource base of land, minerals, food, and forest products. In Wisconsin these demands are especially apparent in the more intensely developed industrial and municipal complexes such as Milwaukee County and the Lower Fox River Valley.

Because each of us requires a very large support system of land and natural resources to sustain our lives at the present level, natural resources, environment, and energy are extremely precious. This becomes especially significant in considering availability of mineral deposits, which are unevenly distributed in the earth and are nonrenewable, fixed in location, and limited in quantity and in purity of ore. These factors are especially important to Wisconsin's residents, for we are self-sufficient in only two of the more than one hundred mineral commodities required to support the industrial structure and economic welfare of a modern society. We have no internal source for ninety of them and we are self-sufficient only in sand and gravel and crushed stone. On a broader scale, our nation imports more than half its requirements of twenty-three of the essential mineral commodities, and we have no domestic source for two.

Mineral, energy, and related supply problems and issues are a matter of state and national concern. Successful solution of these problems and issues requires a clear understanding of economic, environmental, social, and natural resource goals and objectives, a management system designed to accomplish these goals and objectives, and a parallel and continuing program of information gathering, processing, and analysis. For example, soil surveys are essential to the solution of many land-use problems relating to agriculture, construction, pollution, waste disposal, and other matters. Detailed soil surveys require field examination by trained soil scientists. Such investigations in Wisconsin require field study of the soil up to a depth of about 5 feet using a hand auger or a shallow trenching tool. In addition, conditions of vegetation, hydrology, and geology must be examined. In all cases laboratory study and analysis is required prior to, during, and after such surveys to establish the

physical and chemical characteristics which are essential for determining potential and the most appropriate uses for each soil. Only if this is done, can it be assumed that each soil will be put to the best use; that it will not be misused and possibly destroyed; that, if it is a rich soil, it will not be wasted for a less beneficial purpose; and that, if a poor soil, it will not be destroyed and energy wasted in attempts to make it produce what it cannot.

Thus, soil surveys are the means for determining the occurrence, distribution, extent, and quality of soils, knowledge which is essential for wise management that will guarantee maximum long-term benefit to humankind.

If we transfer this reasoning to other earth resources it follows that it they could be surveyed, then we would have the means to determine their occurrence, distribution, extent, and quality, also to the benefit of humankind. Geological and geophysical surveys and investigations provide the basis for making these determinations for the earth's rock formations. The information provided by geological and geophysical surveys is essential to solution of all land-use problems and many water-use questions, and especially those of supply and demand. For example, geological surveys greatly increase decision-making capability and accuracy relating to problems not only of mineral-resource and water-supply potential but of waste disposal, pollution, construction siting, and utility routing. Recreational, industrial, municipal, and agricultural development also benefit.

A continuing supply of minerals in the future requires that suitable deposits be located and that they be available for extraction. Useful deposits of most minerals are rare and their identification is both difficult and costly. It is important, therefore, that areas with a high potential for containing useful mineral deposits be identified, that they be explored in detail to determine their mineral content, and that useful deposits be reserved for future extraction.

WISCONSIN'S MINERAL RESOURCE BASE

Usable deposits of minerals are, with certain exceptions, extremely rare. Two notable exceptions are iron and sand and gravel although these too are unavailable in many areas. It is not known how much of the earth's surface is underlain by usable mineral deposits. According to one calculation (Clark and Washington, 1924), 99.5 percent of the earth's outer crust to a depth of 40 miles consists of 13 elements (oxygen, silicon, aluminum, iron, calcium, sodium, potassium, magnesium, titanium, phosphorus, hydrogen, carbon, and manganese); the remaining 0.5 percent is constituted of the remaining 79 elements. Not only are the majority of elements scarce, but they and the minerals which contain them are unevenly distributed. The mineral commodities strontium and columbium, for example, have not been located in commercial quantities in our country, and we must obtain them from other parts of the world. Where a mineral commodity does occur in concentration, we must be able to mine, process, and market it at a profit under existing environmental, economic, social, legal and energy constraints, otherwise it has no present value.

In theory, one might assume that down to a depth of 40 miles in the earth's crust there is a supply of minerals sufficient to satisfy all our projected needs for thousands of years into the future. We could, as we are doing now, simply start with mining of the richest deposits, and as they were extracted,

shift to mining the less and less rich. This would be possible if the supply of energy required to obtain minerals from the earth and to process and deliver them to the consumer were inexhaustible. Unfortunately, our supplies of fossil (coal, oil, and gas) and nuclear fuels are limited and we have not yet developed technology to utilize the potential of solar energy on earth. We are thus caught in the dilemma of, on the one hand, increasing mineral demands and, on the other, decreasing fuel supplies and decreasing richness of deposits. The result is that to satisfy future mineral demands will require progressively more energy to produce less mineral. This will have the effect of accelerating the rate of energy consumption and thus depleting our energy supplies. The only way of averting this is to develop our energy potential of new and reliable energy sources, such as solar radiation or earth heat, to develop new technologies for mineral extraction and processing which are considerably less energy consumptive, or to develop substitute materials that can be obtained with little or no consumption of energy. It does not appear reasonable at this time to assume that any of these solutions is economically or technically feasible.

Records on mineral production indicate that Wisconsin has provided the metals iron, zinc, lead, copper, and silver and the nonmetals sand and gravel, crushed stone, dimension stone (dolomite, granite, sandstone, quartzite), lime, clay, peat, and sand to help satisfy local, state, and national demands. Wisconsin produces no mineral fuels. A summary of Wisconsin's mineral production from 1910 through 1970 is presented in Table I-1.

In 1972, the latest year for which complete records are available, Wisconsin ranked thirty-eighth among all states in value of mineral production, which was 0.28 percent of the total national production. Among the states, Wisconsin ranked forty-first in value of mineral production per square mile ($1,591) and forty-third in dollar value per capita ($20).

For production of certain commodities, Wisconsin has maintained leadership. For example, in 1972 Wisconsin contributed 4 percent of the total sand and gravel production in the United States and ranked sixth in quantity and fourteenth in value.

Wisconsin's mineral production as reported for 1973 and 1974 by the U.S. Bureau of Mines is given in Table I-2. In 1973, Wisconsin ranked seventh among all states in value of sand and gravel produced and eighteenth in value of stone produced.

At the present time there are three active metal mines in Wisconsin and, it is estimated, over five hundred active nonmetal mines. One metal mine, located in Jackson County, is producing iron ore. The other two, located in Lafayette County, are producing zinc and lead. The total surface area utilized for these mines is estimated at less than 800 acres, or slightly more than 1 square mile--a very small portion of the State's 54,464 square miles.

It is estimated that there are over five hundred nonmetallic mines scattered over the State but primarily clustered in areas of highest population. The amount of new land disturbed for nonmetallic mining each year is estimated at 1500 acres.

Table I-1. Wisconsin Mineral Production, 1910-1970

	1910		1920		1930		1940	
	Quantity	Dollar Value	Quantity	Dollar Value	Quantity	Dollar Value	Quantity	Dollar Value
Clay--tons	NA	$ 1,176,883	NA	$ 1,413,255	NA	$ 2,778,533	NA	$ 326,000
Iron ore--long tons	1,149,551	3,609,139	1,067,159	4,333,307	1,148,277	3,179,175	1,227,840	3,290,389
Lead--tons	3,884	341,793	2,647	423,520	1,537	153,700	445	44,500
Lime--tons	248,238	959,405	144,590	1,539,027	64,989	598,739	65,632	542,749
Peat--tons	0	0	NA	NA	0	0	0	0
Sand and gravel--tons	1,451,758	425,563	2,422,689	1,553,622	7,082,063	2,801,713	6,742,882	2,304,197
Stone--tons	NA	2,644,518	1,564,940	3,729,236	3,370,750	5,100,266	4,330,360	5,030,263
Zinc--tons	20,952	2,133,216	27,285	4,420,170	12,558	1,205,568	5,770	727,020
Miscellaneous[c]	NA	5,249,163	NA	497,360	NA	1,890,201	NA	734,885
Total	---	$12,504,977	---	$18,029,039	---	$17,711,394	---	$13,553,683

Table I-1.--Continued.

	1950		1960		1970	
	Quantity	Dollar Value	Quantity	Dollar Value	Quantity	Dollar Value
Clay--tons	80,000	$ 70,000	144,000	$ 156,000	8,000	$ 14,000
Iron Ore--long tons	1,702,000	8,814,000[b]	1,502,000	16,222,000[b]	806,000	10,308,000[b]
Lead--tons	532	144,000	1,165	273,000	761	238,000
Lime--tons	124,530	1,448,000	---	-a-	247,000	4,503,000
Peat--tons	2,293	9,000	8,500	145,000[b]	1,581	139,000[b]
Sand and Gravel--tons	19,117,000	11,959,000	35,681,000	25,648,000	41,103,000	35,107,000
Stone--tons	7,000,000	14,495,000	16,486,000	22,302,000	17,577,000	25,167,000
Zinc--tons	5,722	1,625,000	18,410	4,750,000	20,634	6,322,000
Miscellaneous[c]	NA	3,129,000	NA	7,675,000	NA	5,871,260
Total	---	$41,693,000	---	$77,171,000	---	$87,670,000

a Included under Miscellaneous
b Estimate
c Includes variously abrasive stones, barite, cement, marl, pyrites, sand-lime bricks, paint pigments, silica
NA Not available
Source: U.S. Bureau of Mines Minerals yearbook, 1906-71

Table I-2. Mineral Production in Wisconsin, 1973 and 1974*

Mineral	1973		1974	
	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays, thousand short tons	2	$ 3	2	$ 4
Gem stones	NA	1	NA	1
Iron ore (usable), thousand long tons, gross weight	956	W	899	W
Lead (recoverable content of ores, etc.), short tons	844	275	1,285	578
Lime, thousand short tons	310	6,004	311	6,764
Peat, " " "	2	208	6	290
Sand and gravel, " " "	40,250	43,647	28,850	34,577
Stone, " " "	23,818	36,917	22,443	40,912
Zinc (recoverable content of ores, etc.) short tons	8,672	3,583	8,737	6,273
Value of items that cannot be disclosed: abrasive stone, cement, copper (1974), silver (1974), and values indicated by symbol W	XX	23,701	XX	25,364
Total	XX	114,339	XX	114,763

* Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
NA: Not available.
W: Withheld to avoid disclosing individual company confidential data; included with "Value of items that cannot be disclosed."
XX: Not applicable.

Source: The Mineral Industry of Wisconsin, 1974, U.S. Bureau of Mines (in press).

On the basis of data supplied by the Soil Conservation Service and the U.S. Department of Interior, the U.S. Department of Agriculture determined that the total amount of land surface disturbed by all mining up to January 1, 1965, in Wisconsin was 35,600 acres, of which 8,200 had been reclaimed. If it is assumed that a maximum of 60,000 acres had been disturbed by January 1, 1976, then less than 0.17 percent of Wisconsin's land area has been used for all mining purposes. Of this amount, an estimated 15,000 acres has been reclaimed without regulation and approximately 1600 acres are being mined at the present time. By way of comparison, in 1971 approximately 2 percent of the State's land area was covered by roads, 2 percent was under cities, and 25 percent was plowed for crop production.

In Wisconsin, minerals occur in three major geologic provinces which overlap and are characterized by their differing ages, origins, and rock types. The provinces are shown on the bedrock geologic map in Figure I-1 and the glacial deposits map in Figure I-2. Bedrock is divided into two provinces: (1) the older Precambrian crystalline rock province, which is a southward extension of the metal-bearing Canadian Shield mineral province that underlies all of the State, and (2) the overlying Paleozoic province of up to 2000 feet of sandstones, carbonate rocks, and shales that occurs in approximately the southern two-thirds of the State.

The Precambrian province is noted in Wisconsin for its content of iron ore reserves and its potential for containing other minerals. Low-grade iron ore reserves in Wisconsin, based on State and federal surveys and company records for only Ashland, Iron, and Jackson Counties are estimated at 5.2 billion tons. This figure may be compared to a projected 20-year production life expectancy from the Jackson County Iron Company mine of 0.015 billion tons, or only 0.003 percent of total estimated reserves. No reserve estimate is possible for other metals and for nonmetals in the Precambrian province because of the lack of geological surveys in the north central part of the State, shown in Figure I-1. However, exploration efforts by companies, in some instances based at least partially on information provided by the State Geologist's office, have led to the discovery of deposits of minerals including copper, zinc, and silver and possibly gold. Vanadium, uranium, and nickel of commercial value may also be found.

The overlying Paleozoic province shown in Figure I-1 as Cambrian, Ordovician, Silurian and Devonian contains the zinc and lead deposits of southwestern Wisconsin. In addition to these metals, it provides dolomite used for crushed stone, dimension stone, and manufacture of lime; silica sand used for manufacture of glass, for abrasives, for polishing, and as molding sand in support of more than two hundred Wisconsin foundries; and of shale used for manufacture of brick and tile. These rocks have the potential to continue to provide these minerals in increasing quantities, as well as to increase their output of metals. However, geological surveys are needed as an incentive to attract exploration capitol to examine these rocks in greater detail to determine their mineral-bearing potential and to provide a basis for zoning.

The glacial province shown in Figure I-2 covers the northern and eastern three-fifths of the state. Figure I-3 indicates that it may be over 600 feet thick. The glacial province is the primary source of sand and gravel aggregate materials and peat and has also provided clay for manufacture of brick and tile and marl, which is used as a soil conditioner. It contains no metals. This province has the potential to provide large quantities of sand and gravel, primarily from areas shown in Figure I-2 as outwash.

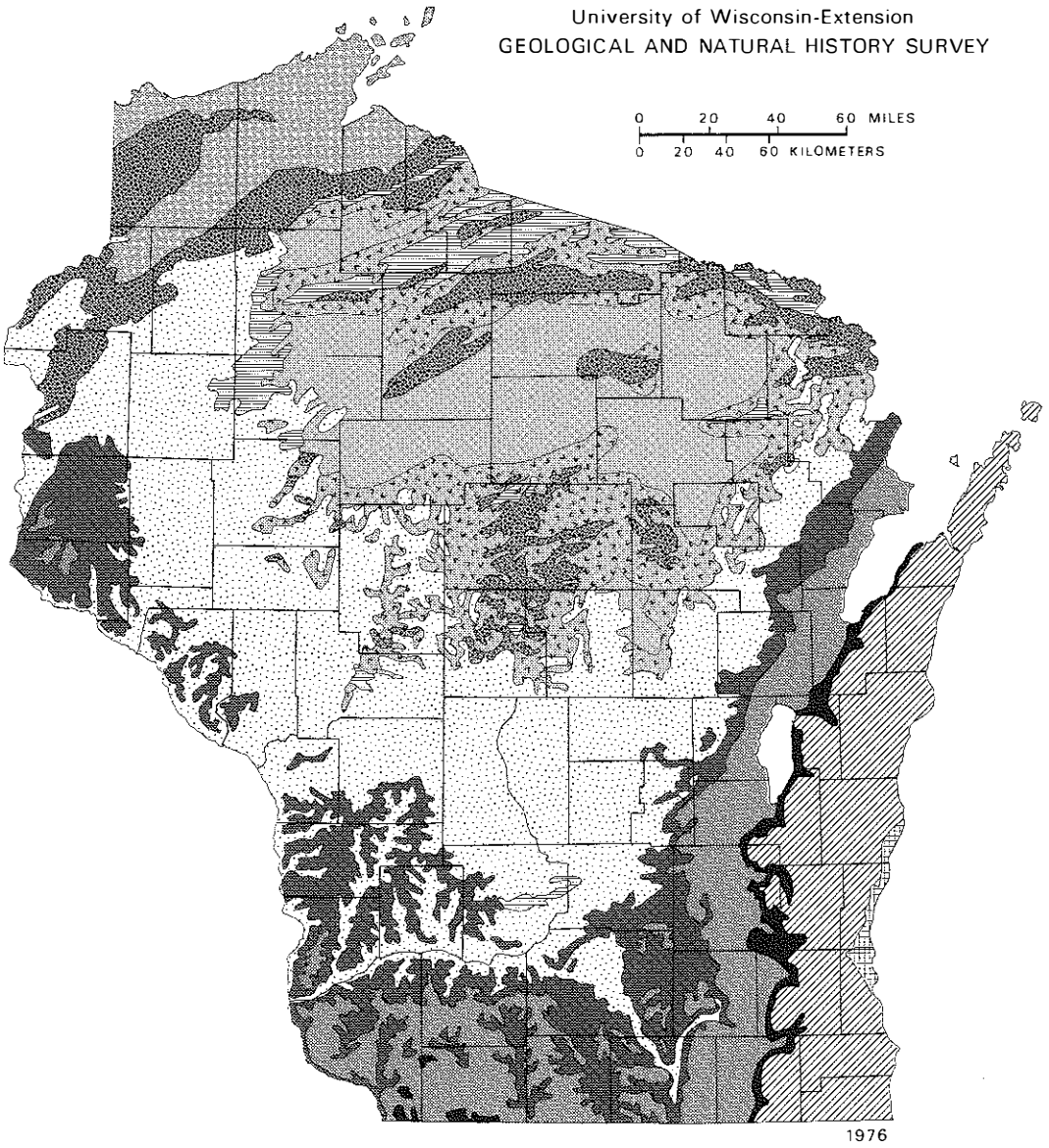

Figure I-1. Bedrock Geology of Wisconsin

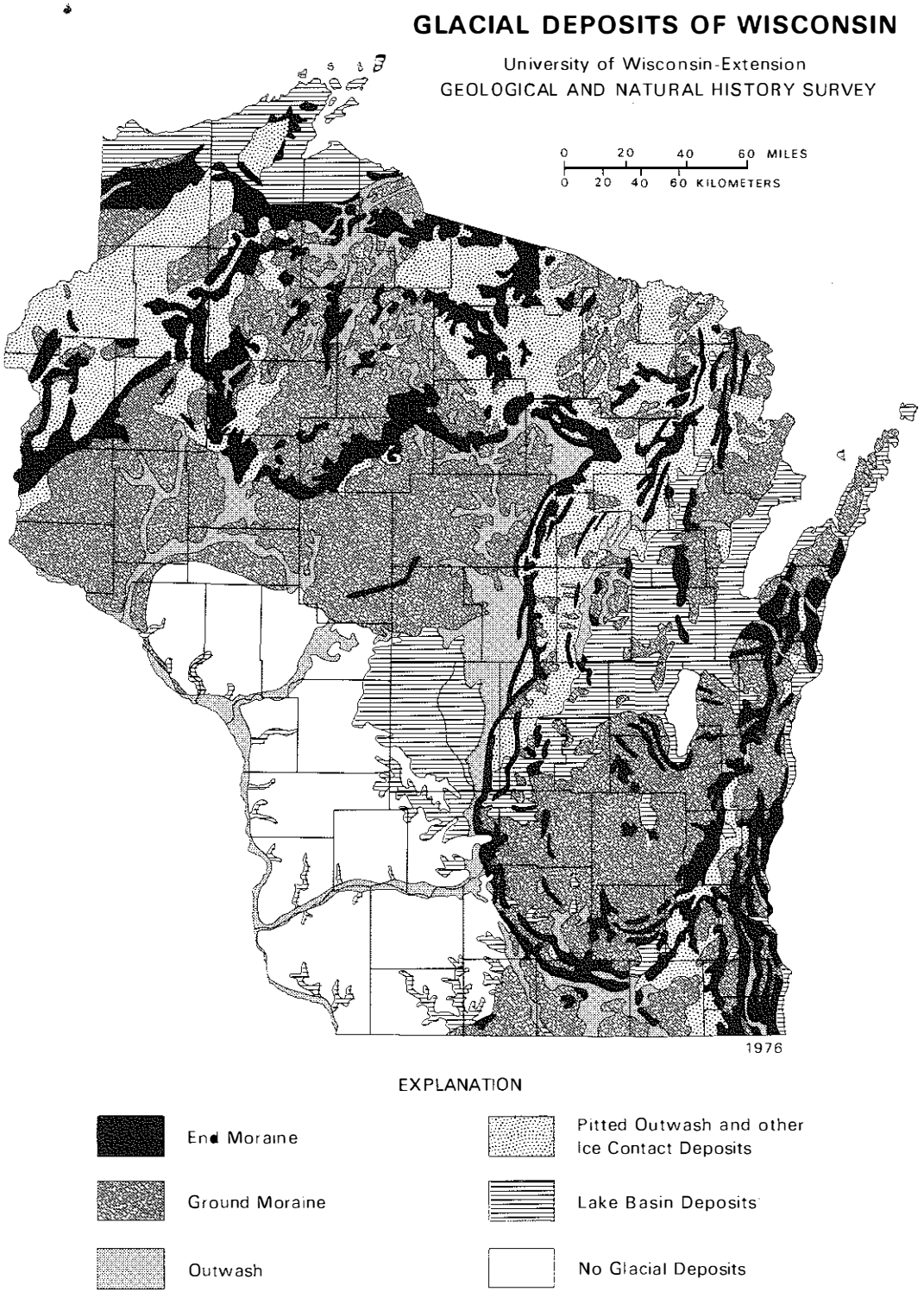

Figure I-2. Glacial Deposits of Wisconsin

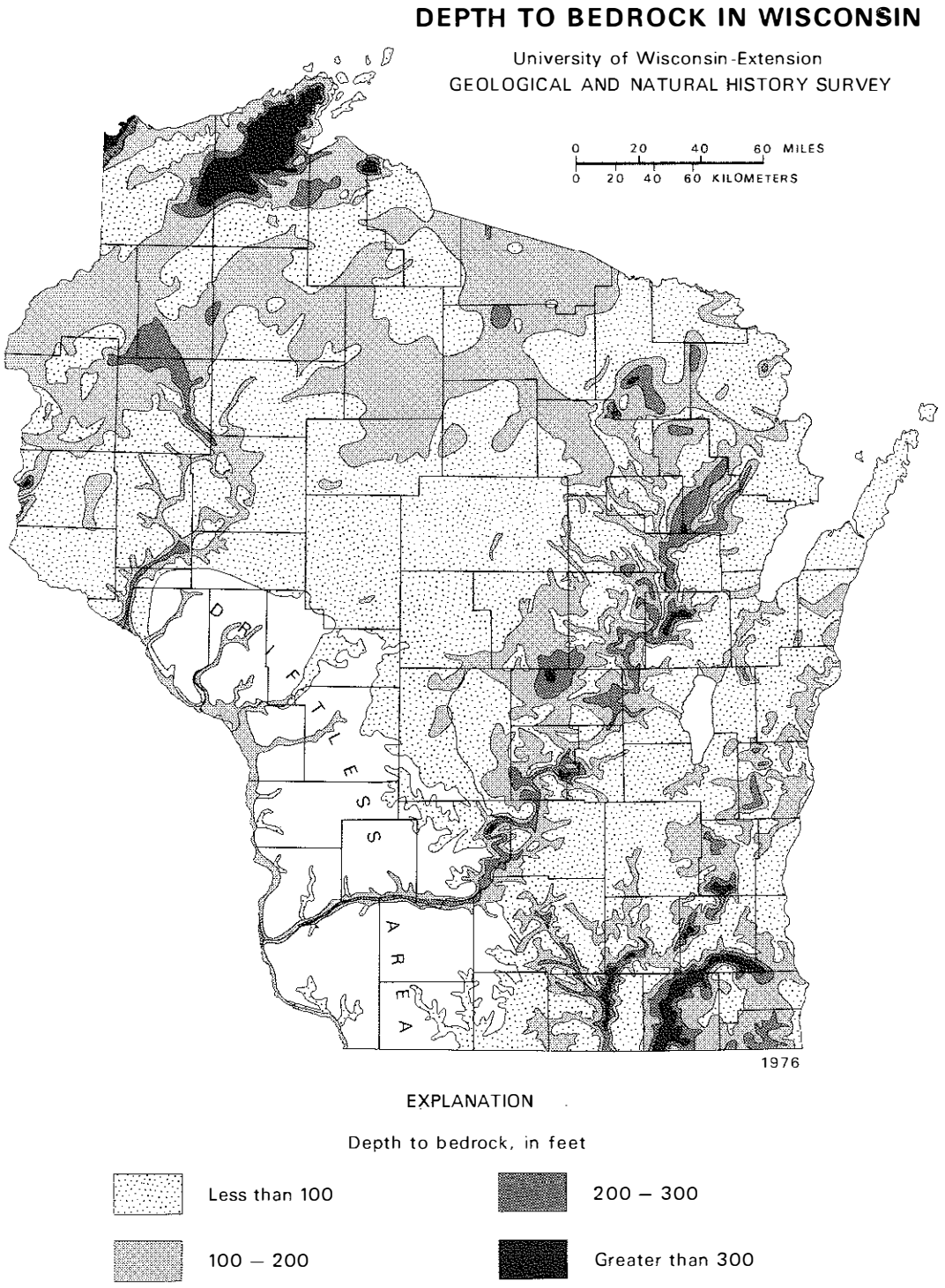

Figure I-3. Depth to Bedrock in Wisconsin

It is reasonable to assume that given no change in policy, future mineral production in Wisconsin will continue at its present rate for each mineral commodity and that it will increase or decrease in response to population and national per capita consumption trends. However, it is also reasonable to assume that future production in terms of kinds and amounts of various mineral commodities will be a function of future policies and the success of exploration efforts in locating new deposits.

In addition to continued and expanded production of the minerals it now produces, Wisconsin has the potential in new geologic situations for discovery and development of other minerals. The list includes but is not limited to copper, zinc, gold, silver, nickel, uranium, and vanadium and the nonmetals talc and feldspar.

In consideration of the significance of minerals to society and of their scarcity as well as the potential for job opportunities and tax revenues, identification and planned development of mineral resources are important to satisfy future needs. Geological and geophysical surveying are the primary methods to identify areas with the highest potential for containing useful mineral deposits, and zoning and financial incentives provide for reservation of known critical mineral deposits and encourage mineral development. Zoning and financial incentives are considered more fully in following chapters of this report.

MINERAL EXPLORATION

Exploration for and discovery of minerals is generally the product of a partnership between government and industry. A report of the U.S. Geological Survey (1975) describes government as being concerned primarily with developing knowledge about long-term total resource potential and options for access to resources in the short term. The report states:

> A responsibility of Government is to collect, synthesize, and analyze basic data about mineral resources and to make the information available to those who need and want such information for making both public and private decisions. A broad base of data is needed by large and small mining companies for development of new target areas for exploration and new exploration and production methods. Planners also require it for determining quantitative analysis of the geologic and economic availability of...mineral supplies. In the years ahead, it will be increasingly necessary for Government to have a reservoir of information for planning purposes and to be able to monitor supplies and sources of supply, as well as uses of minerals at home and abroad, in order to help the nation and its mineral industry across the inevitable economic highs and lows.

Industry is primarily interested in finding ore and providing a marketable product at a profit. The U.S. Geological Survey report indicates:

> A large part of industry's exploration activity is...directed toward developing reserves, generally from identified subeconomic resources and only to a much more limited extent from hypothetical and speculative resources. A company is under-

> standably most concerned with its position in the short-term market place.... The overall balance in treatment and understanding needed for public-policy decisions cannot be achieved by industry alone, as industry concentrates its efforts on specific commodities and possibly overlooks others.

The report goes on to state:

> In recent years the cost in time and money of exploring for ore and developing reserves has increased markedly; at the same time the rate of discovery has decreased markedly. These factors have contributed materially to a reduction in domestic supplies and to price fluctuations which have resulted in overall reduction in funds available to industry for activities in mineral exploration. Some of these difficulties stem from Government actions. Even if industry funds were available, the costs are becoming too great to tolerate continued duplication of uncoordinated effort. Thus government has the option to nurture the supply system through incentives to industry as a whole for increasing exploration activity and efficiency through mineral research and development.

Exploration for and discovery of minerals is generally the product of understanding and cooperation between government and industry, wherein government realizes the importance of a continuing supply of minerals and provides access to land and minerals, while industry invests capital and labor in return for a reasonable profit. On the one hand, government has traditionally assumed the responsibility for a continuing program of collection, synthesis, and analysis of basic data on mineral resources and for making the information available to both public and private users. Geological and geophysical surveys are the basis of such programs and help to identify areas which should be examined in greater detail but at costs far in excess of what government can afford. On the other hand, industry has traditionally assumed the responsibility for satisfying consumer needs and demands for mineral commodities through investment of venture capital in detailed exploration and in development. The benefit of these surveys to government is in having such a reservoir of information for monitoring supplies and sources of supply, for providing a basis for management and planning, and for providing a continuing and reliable mineral supply. In addition, mining and related activities (including the purchase of goods and services) generate income, employment, and tax revenues. The benefit to industry is profit to stockholders from their invested capital. Only through the system of profit incentives can industry be encouraged to invest the large sums of risk capital required for minerals exploration and development. The sums required are too large and the risks too high to justify government participation. For example, Park (1975) reports, "Many companies now estimate that an expenditure of a minimum of $20 million is the average required to find one deposit worth development--and this cost includes nothing of the many millions required for the thorough final evaluation of the deposit and its preparation for mining." He also notes that "a geologist may examine several hundred prospects before he finds one he can recommend", and that "...examination of about a thousand prospects was required to find one mine." For exploration alone the cost of locating one significant mineral deposit may be $25 million or more (Moore, 1974). Kesler (1976) states that experience "...in the Canadian mining industry indicates that an expenditure of $1 million over 3 years will give a company only a 3.2 percent chance of finding a mine."

Government encourages and attracts industry to explore and develop minerals by providing information in the form of geological and geophysical surveys, by enacting reasonable regulations for land use and environmental protection, and by reasonable taxation. It is within the framework of these encouragements that government can develop the capability to evaluate and project future mineral supplies: it can support a program of geological and geophysical surveys; it can create economically and technically reasonable, workable, and acceptable regulations to control land use and environmental protection; and it can tax according to rates and methods which are reasonable and comparable to those charged other industries and by other states.

GEOLOGICAL AND GEOPHYSICAL SURVEYS

Geological and geophysical surveys are essential to determine the distribution and physical and chemical characteristics of the various geologic formations at and below the earth's surface. A professional staff of geologists and geophysicists must be available on a continuing basis to meet the evolving needs of the State.

Geological surveys indicate the nature, occurrence, and distribution of rocks that can be observed from exposures at the earth's surface and from drill records. They are based on field reconnaissance, sampling, laboratory investigation, and analyses. Surveys are particularly important for indicating areas with the greatest potential for containing mineral deposits. Thus, they serve to attract mining companies to make the large capital investments required for detailed mineral explorations, which are too expensive for government to undertake. In addition, such surveys have broad applications to environmental and resource problems and issues relating to water supply, waste disposal, pollution, construction siting, utility routing, erosion and sedimentation, and land development for recreational, municipal, industrial, and agricultural purposes.

Geophysical surveys measure such variations in physical properties of rock materials in the earth as magnetism, gravity, electrical conductivity, and radioactivity. They are based on either airborne or ground surveys using highly sophisticated equipment or both. Information gained from these surveys is critical to support geological surveys in areas where bedrock is beneath a thick soil cover and thus is inaccessible. In addition, geophysical surveys are relatively cheap, and since they do not depend on availability of outcrops, they can be done on a regular patterned grid over the land surface.

Geological and geophysical surveys have broad application to natural resource and environmental issues and problems. For mineral resources, they serve to (1) identify potentially mineral-bearing areas before the land is preempted for uses determined to be less critical; (2) attract private capital investment to the state for mineral exploration and possibly mining; and (3) alert owners of land and/or mineral rights and also local and State governments concerning the mineral resource potential of their lands.

The Geological and Natural History Survey has, since its creation in 1897, had the statutory assignment of surveying the State's rock and mineral resources. However, funding for this purpose has been inadequate. To date, geological survey mapping at the scale of 1 inch to 2,000 feet (1:24,000), which is generally preferred and often required for mineral resource evaluation and other purposes, has been completed for less than 3.5 percent of the State's land

area. An additional 8.0 percent is completed at the scale of 1 inch to 1 mile (1:62,500), as shown in Figure I-4. Thus, in spite of the value of geological surveys, maps of adequate scale and of sufficient detail to indicate mineral resource potential are unavailable for more than 88 percent of Wisconsin's land area.

Geophysical surveys, begun by the Geological and Natural History Survey in 1972 on extramural funds, have produced preliminary maps which show gravity and magnetic variations. Gravity surveys have resulted in a preliminary and very general statewide map (Hammer and Ervin, 1975; scale of 1:500,000 or one inch to eight miles). However, gravity surveys of sufficient detail to provide the needed support for broad mineral resource evaluations (one station per square mile) have only been completed for an area of northeastern Wisconsin which represents 7 percent of the State's land area. Aeromagnetic surveys flown along north-south flight lines spaced one-half mile apart and covering approximately 16,000 square miles in north central Wisconsin have produced a series of detailed maps (scale of 1:24,000), as shown by Figure I-5. Completion of both these surveys for at least the northern three-fifths of the State is critical to geological interpretation and evaluation of mineral resource potential.

CONCLUSIONS AND RECOMMENDATIONS

Geological and geophysical surveys are necessary to determine the nature, occurrence, and distribution of geologic formations in the earth. In addition to its use for other purposes, this information is a prerequisite to (1) identifying areas with the highest potential for containing minerals, (2) evaluating those areas, and thus (3) encouraging and guiding the much more costly exploration by the mining industry and the development of reasonable and workable zoning regulations by government. Decisions relating to mineral resources, land use, water supply, pollution, waste disposal, construction siting, and utility routing cannot be made intelligently without a survey of geologic conditions. Decisions made without benefit of such surveys will lead to costly errors in the form of increased public expense and misuse of limited and critical natural resources, abuse of the environment, and wasted energy. On the other hand, geological surveys greatly increase our capability to provide for future mineral supplies adequate to meet demands, to decrease public expense, to improve land-use practices, to conserve limited and critical resources, to improve environmental conditions. to decrease pollution, and to develop realistic and more beneficial zoning regulations.

A major and additional source of new geological and geophysical information is that developed by private companies through exploration activities. A requirement that all such information be submitted to the State Geologist would be of great benefit to government and individuals for resource and planning efforts and to private companies for future exploration.

It is recommended that the State expand its geological and geophysical data base through field surveys and collection of data from both government and private sources. Such information would provide a basis to: (1) identify potential mineral-bearing areas before the land is preempted for uses determined to be less critical; (2) encourage private capital investment in mineral exploration and development; and (3) inform owners of land and/or mineral rights concerning the mineral resource potential of their lands. Surveying should begin in areas of suspected but unknown mineral resource potential and of real and

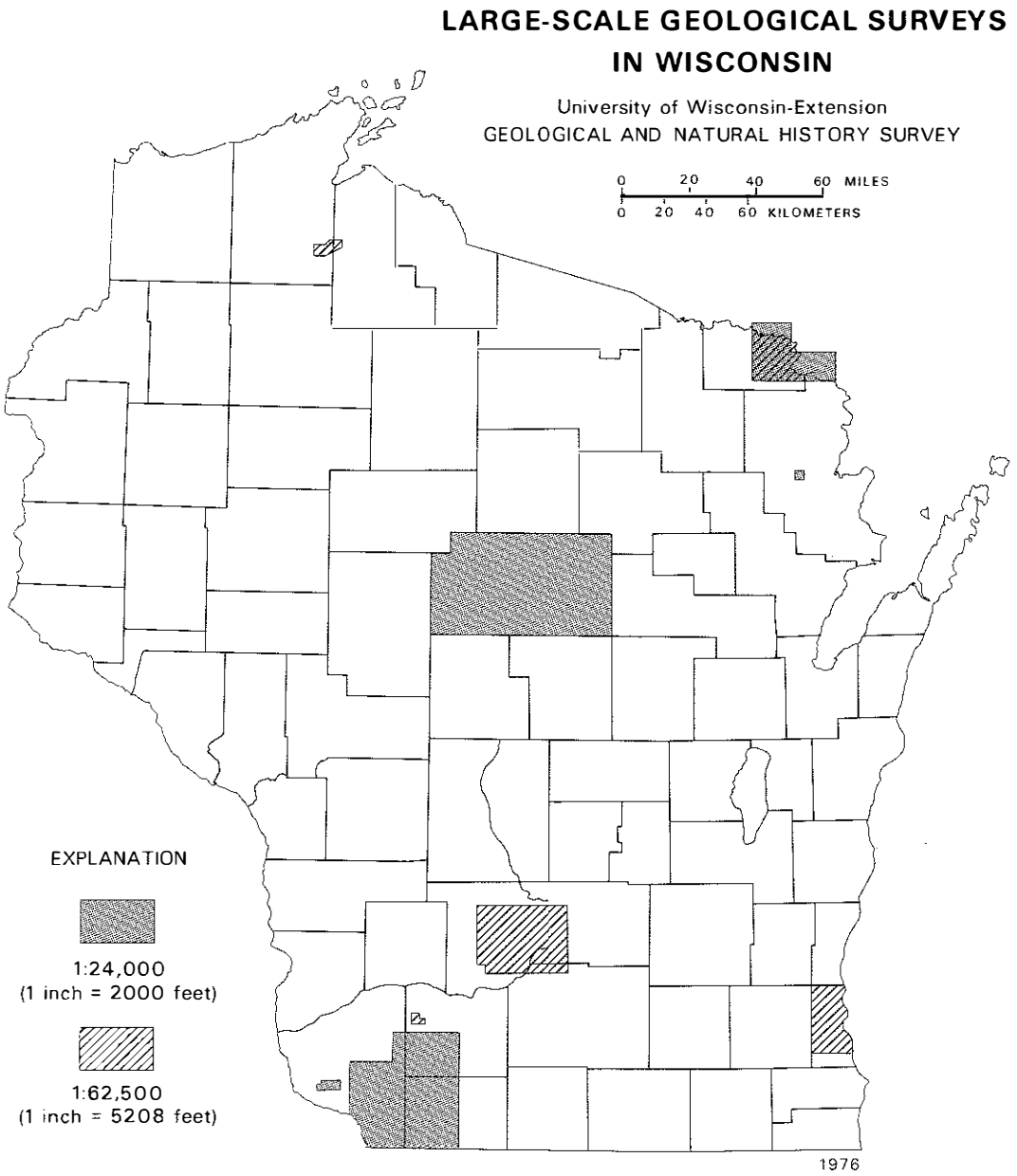

Figure I-4. Index to Detailed Geologic Mapping in Wisconsin at Scales of 1:62,500 and 1:24,000

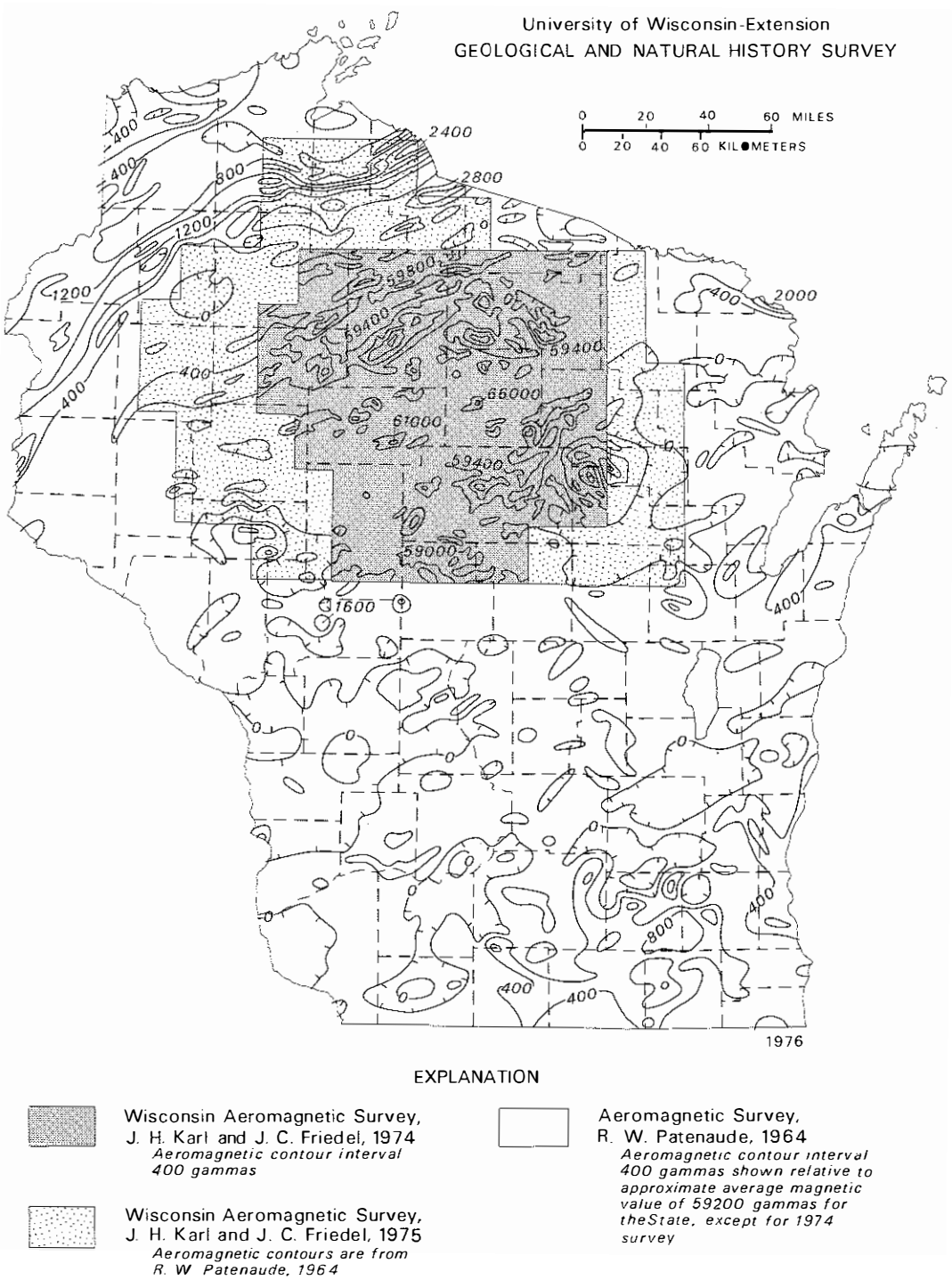

Figure I-5. Aeromagnetic Map of Wisconsin

anticipated environmental problems. This program could be greatly enhanced through acquisition of information developed by companies in their explorations.

The surveying/information program should have the short-range objective of completing Statewide geological and geophysical surveys and special resource and environmental studies and the long-range objective of providing for the continuous evaluation of new information and the application of new technologies, facts, concepts, and theories to developing resource and environmental problems and issues.

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Chapter II

REGISTRATION OF MINERAL PROPERTIES

by

Yolanda Holy*

ABSTRACT

The separation of surface and mineral rights in Wisconsin and the absence of a specified registration policy for the mineral rights and subsequent title transfers necessitates an increased expenditure for a complete search of title before the lease or purchase of mineral estates in Wisconsin. Ambiguities in mineral ownership have prohibited the orderly development of these mineral properties. In areas with complex property titles, a mining company may be unable to acquire a sufficiently large contiguous tract to allow mineral development. Unnecessary costs associated with the inception of mining activities in Wisconsin should be mitigated by stable and responsible government policies. The establishment of state policies requiring mandatory registration of the titles of mineral estates would significantly reduce some of the disincentives that the present situation creates. Five methods to implement mineral rights registration are recommended as ways to overcome legal objections raised against Chapter 260, Laws of 1973.

INTRODUCTION

If the State of Wisconsin wishes to encourage the expansion of mining activities within its boundaries, the financial and temporal costs associated with the identification and subsequent exploration of potentially mineable mineral deposits should be minimized through clarification of the ownership of its subsurface mineral properties and the related legal implications.

The establishment of State policies requiring mandatory registration of titles to severed and unsevered mineral estates would significantly reduce some of the disincentives to mining which exist under the present system. The creation of a comprehensive register of subsurface mineral properties would considerably simplify acquisition of rights to explore and mine. Such a register would make it notably less cumbersome and less expensive for mining companies and other interested parties to explore for minerals and to obtain the rights to mine any potential discoveries. This procedure would be expected to encourage the expansion of present exploration efforts and presumably, the subsequent expansion of the mining industry in Wisconsin.

An increase in the level of mining activity in Wisconsin would benefit government and the tax-paying public through the expansion of the local property tax base and through other revenues generated by industrial development. The taxes paid on production by these mining operations could further reduce taxes throughout the state. Local governments would also benefit from payments of fees, and from other expenditures made by the company to finance the expansion and/or improvement of public services and public facilities such as roads, bridges, and sewage systems, which may be needed by the mine.

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An incoming industry also creates new jobs which are directly and indirectly related to mining. These expected increases in employment which would be generated by mining would directly and substantially reduce the burdens on federal, state, and local public assistance and income maintenance programs. Expenditures for such programs are typically high in the declining economies of the northern counties where the majority of the state's mineable metalliferous resources are located.

A discussion of the present system of mineral rights registration in Wisconsin and related issues and problems follows below. Five alternatives for implementing registration are presented.

THE PRESENT SYSTEM

Historically in Wisconsin, subsurface mineral rights have been treated as a separate property classification, legally transferable by sale or deed, together with or separate from the ownership of surface property rights.

> Usually when land is sold, the buyer gets an interest in real property called a fee simple. This means he is the absolute owner of the land from the center of the earth up to the sky....By selling part of the fee simple, the seller created two separate estates from what had been one estate before. (Barkin and Preston, 1974)

or alternatively (Black, 1968, p. 1146):

> The fee ownership of land generally includes the soil and minerals thereunder. However, interests in land may be held in only a stratum of the entire fee. There are then surface interests and subsurface interests. This is the case in a severed mineral situation.

This separation of the surface and subsurface interests may be accomplished in a number of different ways:

1. The mineral interests may be reserved while title of the surface estate is conveyed to another.

2. An easement by reservation may be created in a deed which conveys the surface interest.

3. The most common method of severance is accomplished through the creation of a fee simple interest in the surface to the grantee, and a fee simple interest in the mineral estate conveyed to the grantor.

As a result, many property owners have reserved or sold all or some fraction of the mineral rights beneath their lands, thus "severing" the rights to some of or all of the minerals beneath the surface from the surface property rights.

Mineral Right - Definition

A mineral right has been defined as "an interest in minerals in land. A right to take minerals or a right to receive a royalty" (Black, 1968, p. 1146). Or alternatively, "a mineral right is the ownership of the right to use or mine the substances found in the earth which are brought to the surface for purposes of making a profit" (Barkin and Preston, 1974, p. 6).

Right of Dominant Estate

Although approximately 75 percent of the landowners questioned in a recent field study (Pinkowitz, 1975) knew whether or not they owned both the surface and subsurface rights to their property, they were typically unaware of the legal implications of such a mineral reservation. The majority of surface owners questioned incorrectly assumed that they retained control of the disposition of a severed mineral estate. In fact (Barkin and Preston, 1974, p. 7)

> The law states that the mineral right is the "dominant estate". This means that if a person owns the mineral rights he has the right to go onto the surface and mine those minerals. His only legal responsibility is to compensate or pay back the surface owner for damage done to the surface and provide ground support for buildings on the land. (original emphasis)

The owner of a severed mineral estate has the right, by law, to introduce any necessary buildings or other capital fixtures, and to conduct any exploratory and extractive activities necessary for the efficient removal of the minerals from the ground, at his discretion.

While the reservation or transfer of subsurface mineral rights is regularly noted on the official property records of the surface property at the time of transaction, this information is only very inconsistently noted on subsequent titles or records of transfer of the surface land. These inconsistencies in title transfers together with a lack of any comprehensive index or other register of mineral estates necessitate a search of the complete title chain of the surface property in question in order to establish the severance of mineral rights, and to identify the owners of these rights.

The search is further complicated when the holder of the subsurface estate may have come by such title through inheritance, or other indirect or passive means, and may be unaware of the existence of the estate.

Field Investigations

In 1975, field research was conducted in three northern Wisconsin counties (Rusk, Iron, and Douglas) to identify and assess the extent of the problems associated with the identification of severed mineral estates, to measure the incidence of severance in the sample counties, and to investigate the valuation of severed mineral properties or lack thereof.

William Pinkovitz (1975) found a large number of inconsistencies in the references to mineral estate reservations over the ownership sequences of individual properties, indicating the need for a search of the complete title chain of each and all properties of interest to a mining company or developer.

Pinkovitz found that reservations frequently would be found early in a title chain, would disappear, and would reappear much later in the sequence.

> The only apparent standard procedure regarding mineral reservations is that there is none. The only method of determining, with any certainty, whether or not a particular parcel has any mineral reservation against it is to trace the entire title chain. There is no guarantee that simply because no mineral severances are mentioned in the most recent transaction that none exists. Commonly when mineral reservations were discovered, they were found early in the title chain. Severances are usually mentioned in a few deeds following the reservation then frequently disappear from the title description altogether.
> ...It has also been observed that not only do references to (earlier) reservations disappear, but they also reappear in late deeds (Pinkovitz, 1975).

The inconsistencies observed in tital sequences make it difficult to ascertain whether the latter reservations are in reference to the original severance (which would have legal precedence) or whether they are intended to establish a new severance by parties unaware of the severance established previously.

Warranty Deeds

Further complicating the identification procedure are warranty deeds which may be given by a grantor at the time of sale. A "warranty deed" guarantees that the property is free of any mortgages, liens, or other claims against the property except as stated in the warranty deed. If any other valid claims should appear subsequent to the issuance of the deed, the grantor is liable to the grantee for any damages or losses because of it.

Pinkovitz (1975) found that often several warranty deeds existed within a single title sequence--none of which made any reference to previous reservation(s). Such evidence raises potential legal issues as to which reservation would be the valid one, and who would bear the liability for the loss or losses as guaranteed by each of the warranty deeds.

Fragmentation

The issues described above are yet further complicated by the increasing fragmentation of reserved mineral estates over time, due to sale or reservation of some fraction of the original mineral estate. The lack of well-defined mineral property records has resulted in some cases of division of mineral estates such that the sum of the fractions granted by various deeds within a single title sequence is greater than 100 percent; that is, some parts of the mineral estates have been reserved to more than one owner. Local authorities questioned by Pinkovitz were of the opinion that the original reservation would have legal priority; however, the issue has not yet been subjected to judicial or other tests.

Additional complications related to ownership identification are the difficulties associated with locating present owners. After determining the severance of the mineral estate and identifying the owner, the interested party must attempt to locate the present holder of the mineral rights, as designated by the reservation which is judged to have legal precedence.

Many mineral estates were reserved by corporations that are now dissolved or by individuals who are no longer living. In such a case, a mining company or other interested party must locate the heirs to holders of the original reservations, and attempt to acquire their interest in the estate, possibly a complex and expensive operation. Like any investment, development of a mining operation can involve significant financial risks; and the difficulties in identifying ownership and establishing the right to mine may be a sufficient disincentive to delay or discourage the mining of deposits with marginal economic value.

It was reported in one case twenty years ago that potential mine investors desisted from investing in mining a potentially profitable asbestos deposit located in north central Wisconsin because of estimates that it would cost over $200,000 just to identify and locate the present owners of the mineral estates, and purchase from them quit-claim deeds to their share of the interest. The high cost was attributed to the fact that the majority of the mineral estates belonged to the shareholders of the old Wisconsin Central Railroad dissolved in 1890, whose heirs would be difficult to trace.

Before a mining company discloses a discovery, it tries to acquire the rights to the entire ore body. If it is unable to do so because the owner of one part cannot be identified or located, working around the missing portion is awkward at best. In addition, if an owner should then appear subsequent to the inception of actual mining activity, he would be able to exact a very high price for the mineral right after adjacent mining had fully disclosed its value. The owner might even demand (and obtain) reimbursement greater than the full market value of the property because of the unique location of his claim. If a mining company is incapable of acquiring a sufficiently large continuous tract, mining the mineral deposit may not be economically justifiable.

If the State of Wisconsin wishes to encourage expansion of mining operations in the State, the costs associated with the inception of those activities should be minimized by clarification of government policies towards mineral properties. As long as the present disincentives exist, both the public and private sectors in the State of Wisconsin may be foregoing substantial social and economic benefits.

POLICY

The positive effects of a comprehensive mineral properties registration policy can be readily postulated, but the difficulties in designing a workable instrument to achieve such ends are notably more complex. While several attempts have been made in the past to devise policy which would assist in identifying the location of and claimant(s) to such estates, a legally acceptable alternative has eluded state policy-makers to date.

The most recent attempt (prior to the 1975 legislative session) to legislate the registration of mineral properties, entitled Chapter 260, Laws of 1973, which created section 700.30 of the Wisconsin Statutes, entitled "Mineral Rights" (1973), was recently held to be unconstitutional by the Bayfield Circuit Court and is presently being appealed by the State of Wisconsin to the District Court of Appeals.

This section of the Statutes provided that any person other than the surface owner who claimed title to the subsurface mineral rights would be required to record such a claim with the Register of Deeds of the county in which the property was situated. This claim was to describe the reserved rights and the location of the estate. The claim was then to be recorded and an annual registration fee of $0.15 per acre or fraction thereof, with a minimum fee of $2.00 for each single property, was to be paid in accordance with section 59.57 of the Wisconsin Statutes.

Failure to register a separate claim on subsurface mineral property was to result in a reversion of all such rights to the surface owner. Failure to pay the registration fee within three years of the annual due date was also to cause all the rights to revert to the surface fee owner.

The constitutionality of the statute was subjected to court challenge by the Chicago and Northwestern and the Milwaukee railroads; and a temporary injunction against the implementation and enforcement of Chapter 260, pending final determination of its constitutionality, was issued on November 22, 1974.

The Bayfield Circuit Court found the act to be unconstitutional on December 18, 1975 on the basis of three major points: (1) lack of provision for procedures of due process; and (2) violation of equal protection under the law, both as required by the Fourteenth Amendment to the U.S. Constitution; and (3) violation of the uniformity of taxation required by Article VIII, section 1, of the Wisconsin Constitution.

The court first confirmed the proposition that the mineral rights in a parcel of real estate could be severed from the surface rights, thereby creating two completely separate and independent estates--emphasizing the basis for the subsequent judicial ruling.

Due Process

Statutory provisions (Wis. Stat., sec. 700.30 (1973)) stated that if a severed mineral right was not recorded and if registration fees were not paid as required by the act, the ownership of the severed mineral estate would revert to the owner of the surface property. The court asserted that due process of law as required by Amendment Fourteen of the U.S. Constitution was violated because the act lacked provision for appeal and/or other manner of challenge subsequent to transfer of any subsurface property to the owner of the surface estate.

Equal Protection

The annual payment of a uniform per acre fee required by Wis. Stat., sec. 700.30 (1973) for retention of title to a subsurface mineral property was in violation of the equal protection requirements of the U.S. Constitution. The court ruled that under such a provision, the fee constituted a tax, and as levied, the rate of taxation would not vary in proportion to the value of the property being protected. That is, two people holding mineral estates of equal market value might have been required to pay unequal taxes (on the basis of total acreage) in order to assure their retention of rights and title to the subsurface mineral estate. On this basis, the court ruled, equals were not being treated as equals, in violation of the equal protection under the law as required by the fourteenth Amendment.

Uniformity of Taxation

Closely related to the issue of equal protection is the requirement of uniformity of taxation imposed by Article VIII, section 1, of the Wisconsin Constitution. The Bayfield Circuit Court did not directly address itself to the issues of uniformity, but rather made references to an opinion of the then State Attorney General, Robert E. Warren, addressed to similar legislation proposed in 1965. The 1965 legislation had proposed a per acre levy very similar to the one recommended in the 1973 legislation.

Under both legislative proposals (1965 and 1973), those properties that were not subject to a separate reservation of the subsurface estate would continue to be assessed at the full market value of the surface property, while identical properties subject to a separate reservation of the subsurface mineral estate would be assessed at the full market value of the surface property plus the assessed value of the severed mineral estate, in violation of the uniformity of taxation between property owners required by Article VIII, section 1 which states:

> The rule of taxation shall be uniform...on real estate.... Taxes shall be levied upon such property with such classifications as to forests and minerals including or separate or severed from the land as the legislature shall prescribe.

Thus, under the proposed legislation, given three parcels of property of equal size, the owners of severed mineral rights would be required to pay the same total fee, or tax, although the full market value of their two estates could differ substantially, while a third property owner who retained the mineral rights through his ownership of the surface estate (as is the case with "ownership in fee simple" where no severance has taken place) would not be required to pay any fee, (in addition to the tax on the market value of the surface property as assessed. Since mineral rights are considered to be "real property", as Article VIII indicates, they may be required to be taxed in a manner uniform with that applied to other real property, on an "ad valorem" basis. If mineral lands were taxed according to a uniform per acre rate as directed by Wis. Stat. sec. 700.30 (1973), mineral rights of known value would be taxed at the same rate as mineral rights of unknown value, further violating the uniformity of taxation.

Adverse Possession

Chapter 260 also created a modification of the adverse possession statutes by stating in section 893.075 (Wisconsin Statutes) that "adverse possession" of land was to be deemed to be inclusive of the adverse possession of unregistered mineral rights directed by Wis. Stat., sec. 700.30 (1973).

The court overruled this provision by emphasizing the separation into two distinct and independent estates consequent to the severance of the subsurface property from the interest in fee simple. Possession of the surface estate was held to create no claim to an adverse possession of the subsurface, since the mineral right was a property separate and distinct from the surface property. The court indicated that the title to the subsurface mineral estate could be gained by adverse possession but only through the open and notorious occupancy of the mineral rights, by mining or other means, for the period designated by statutory provision.

In addition, the Bayfield Court was of the opinion that adverse possession of the surface of any land which would lead to adverse possession of any unregistered mineral rights beneath the surface was also in violation of the requirements of due process, because the law included no provision for notification of the owner of the severed mineral property.

The violations of constitutionality which provided the basis of the judicatory judgments against the legality of Wis. Stat., sec. 700.30 (1973) continue to confound policy makers concerned with the problems associated with the delineation of subsurface mineral estates and the identification of ownership, both in Wisconsin and in many other states.

OTHER STATES

The following table II-1 lists brief summaries of the legal mechanisms by which other states attempt to cope with the problems and issues associated with the ownership of undeveloped mineral property rights. This is followed by the summaries of past legislative proposals of the State of North Dakota, since the problems and issues faced by this state seem to parallel closely and thus be especially pertinent to the Wisconsin debate.

It quickly becomes obvious that few of the states have any registration requirements for undeveloped mineral properties. At least one of those that have implemented some legal registration requirements is presently facing a challenge on constitutional grounds.

NORTH DAKOTA

The North Dakota legislature recently defeated proposed legislation designed to mitigate problems created by nonregistration of mineral properties: obfuscation of title, increasing fragmentation of properties over time, and others discussed in previous paragraphs. The legislative proposals quoted and discussed below are of particular interest because of the description of the problem(s) to which the legislation is addressed, as well as for the solutions they propose.

North Dakota Senate Bill No. 2084

This bill proposed to require that mineral interests which have been severed from the surface be filed for record to provide a method of filing and verifying ownership of severed mineral interests, and forfeiture for failure to refile. The bill stated:

> Legislative Purpose: The purpose of this act is to identify and clarify the obscure and divided ownership of severed mineral interests in this state. Because the ownership of many mineral interests is becoming more obscure and further fractionalized with the passage of time, the development of mineral interests in this state is often impaired. Moreover, a class of real property has been created which, although not exempt from taxation, is not assessed for tax purposes because the costs of ascertaining ownership are prohibitive and therefore the property does not contribute toward the cost of supporting the governments which preserve and protect its continued integrity and existence. Therefore, it is in the public

interest and serves a public purpose to provide a method whereby mineral interests which have been severed from the surface estate may be readily identifiable and clarified for purposes of development and taxation.

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(S.2) SEVERED MINERAL INTERESTS TO BE RECORDED
Every owner of a fee simple interest in minerals in lands in this state which is owned separately from the fee title to the surface of the property, hereinafter referred to as a severed mineral interest, shall fill for record the instrument of conveyance or reservation in the office of the register of deeds in the county in which the severed mineral interest is located. (Emphasis added.)

In addition to information generally required for the recording of all property, the owner of the severed mineral interest would be required to provide the following information:

1. The address of the owner.

2. The interest of the owner in such minerals.

3. The legal description of the property upon or beneath which the interest exists.

4. The book and page number or the document number in the records of the Register of Deeds of the instrument by which the severed mineral interest was created or acquired.

A time limit of January 1, 1977, was set for registration of all claims acquired on or before the effective date and a one-year limitation for any properties acquired after that date.

If a claimant to title of a severed mineral interest should fail to record that interest within the specified time limitation, the property would be forfeited to the state.

The county treasurer and the county auditor shall prepare a list of such severed mineral interests and shall sell such severed mineral interests at public auction (as provided by North Dakota Statutes) except that reference shall be made to this Act in the notice of sale and at the time of sale and the severed mineral interest shall be stated and sold separately from the lands subject to sale for delinquent taxes. The county treasurer shall receive all monies paid at the auction for severed mineral interests, and, after deducting the costs to the county, including delinquent taxes on the severed mineral interests, shall pay the monies to the state treasurer who shall deposit the monies in the General Fund. The terms of the conveyance of a severed mineral interest to the successful bidder shall provide that the holder of the severed mineral interest (shall not disturb or enter upon the surface of the lands without the surface owner's written consent to the disturbance or entry. (Emphasis added)

Table II-1. Mechanisms of Registration and/or Taxation of Severed Mineral Rights

State	Mechanism
Alaska	None
Arizona	Deeds conveying or reserving severed mineral rights are recorded in the county recorder's office in the county in which the property is situated in the same way and in the same register as all other deeds conveying real property. The only difference is that a conveyance of a severed mineral estate or any other mineral property is usually indexed in the Deeds of Mines Index, as opposed to the Deeds of Real Estate Index.
California	The California State Board of Equalization has recommended that, unless there is good evidence to the contrary, severed undeveloped mineral rights be assessed at zero value.
Colorado	There is no law at present requiring registration of ownership of a subsurface mineral estate; however, the high incidence of valuable minerals in the State of Colorado has proved to be a strong incentive to the owners of severed mineral interests to establish legal records of their titles. All severed mineral interests are then taxed at 30 percent of the full market valuation. If no market exists, or if the value of the property cannot be ascertained, the mineral right is then assessed at $1.00 per acre for each category of severed minerals, with a $50.00 minimum. (In 1975, severed interests containing metalliferous minerals were assessed at an average of $1.11 per acre, while nonmetallic deposits were assessed at $1.13 per acre.)
Idaho	There is no legal requirement of registration. All mineral rights reserved to any grantor, except the federal or state governments, by conveyance of any land other than lands acquired under the mining laws of the United States, shall be assessed at not less than $5.00 per acre.
Illinois	Mineral rights are registered, assessed, and taxed as any other real property.

Table II-1. Mechanisms of Registration and/or Taxation of Severed Mineral Rights--Continued

State	Mechanism
Michigan	There is no legal requirement of registration of undeveloped mineral estates at present. Statutory provisions state that mineral rights consisting of metallic resources which are not developed, or not in production, or which have not been explored shall be assessed separately from the surface rights in the property, if such mineral rights and surface rights are owned by separate owners, with exceptions. The state assigns a presumptive value of $5.00 per acre to these severed mineral rights.
Minnesota	Chapter 650, Laws of 1973, Article XX, amended Minnesota's 1969 Mineral Registration Act (Minn. State, Sec. 93.52.58) by providing that anyone failing to file his claim within the statutory period would forfeit said interests to the state. All severed mineral interests are subject to advalorem taxation in the same manner as other real property. Mineral properties of indeterminate value are subject to an annual tax of 25¢ per acre, at a minimum of $2.00 per property. The constitutionality of this amendment has been appealed and is awaiting judicial decision.
Montana	There is no legal requirement of registration of severed mineral estates.
Nevada	Severed mineral rights may be recorded in Nevada by means of a document similar to that of any other conveyance or contract. "While recordation is optional, ordinary prodence would suggest such procedure as notice to third parties."
New Mexico	There is no legal requirement that severed mineral rights be registered. Class one patented severed mineral interests are taxed by applying a per acre value to the surface area of the property.
Utah	Severed mineral rights need not be registered unless the property is on patented land, in which case there must be a recording showing the owners of both the mineral and surface rights.
Wyoming	There is no legal requirement of registration. Where the mineral estate has been severed from the surface estate, and no minerals have been produced, the mineral estate has not yet been subject to assessment for taxation. In the absence of such assessments, there can be no delinquency, and consequently no valid sale for delinquent taxes.

After the sale of the mineral property and the transfer of sale revenues according to the specified procedure, the legislation provided a claimant to the property (prior to forfeiture) the right to verify his ownership and petition the court for reimbursement of the fair market value of the estate minus any charges against the property. Such action would have to be commenced within six years after the forfeiture to determine the ownership and fair market value of the severed mineral interest at the time of forfeiture. If such ownership were verified, the claimant might petition the state treasurer for monetary reimbursement equal to the fair market value of the property at the time of forfeiture, less any taxes, penalties, costs, and interest which could have been collected during the period following the forfeiture had the property been assessed and valued for tax purposes.

The legislation also contained a provision for the state treasurer to appear and contest the allegations of ownership and value in the same manner as a defendant in such an action.

The act also provided for a filing fee of $0.02 cents per acre on the total acreage of the severed mineral interest located within the county, with a minimum fee of $2.00 to be paid by any person who filed a verified statement of ownership.

North Dakota House Bill No. 1117

During the same legislative session, an alternative method of identification of ownership was proposed in House Bill No. 1117, as follows:

> PURPOSE:
> It is the purpose of this Act to identify ownership of mineral interests, particularly severed mineral interests, and to promote the general welfare and protect the rights of property owners. It is not the intent of the legislature to raise revenue, but rather it is the intent of the legislature to discourage property owners from reserving mineral interests and fragmenting the ownership of such mineral interests. The legislature recognizes that the ownership of mineral interests is becoming more obscure and further fractionalized with the passage of time. It is, therefore, in the public interest to identify and to clarify these interests, and to assure that exploration and development of mineral resources and natural resources will not be prevented by the existence of outstanding mineral estates whose owners have abandoned them or can no longer be located. (Emphasis added.)

The act specified assessment of all mineral properties, both severed and unsevered, and the consequent foreclosure of title for tax delinquency and subsequent sale of the property.

> (Sec. 1) ASSESSMENT OF MINERAL INTEREST
> All mineral interests located with this state and not within the boundaries of a city, regardless of whether the same are attached to or are severed from the surface estate, shall be taxed annually at a rate of three cents per acre for each acre of real estate, unless otherwise exempt. Such mineral interests shall constitute a classification of property separate and apart from the surface estate for purposes of taxation.

...(The tax shall be apportioned) according to the ownership of each mineral interest, severed and unsevered. Such tax... shall become due and delinquent at the same time as real estate taxes.... (Emphasis added.)

(Sec. 2) FORECLOSURE PROCEEDINGS
All mineral interests taxed in the manner provided in the Act shall be subject to foreclosure for delinquent taxes and sold in the manner provided by law for the sale of real property for delinquent taxes.

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Both of the North Dakota legislative proposals were defeated when brought to a vote.

WISCONSIN: POLICY RECOMMENDATIONS

The arguments in favor of implementing some type of registration requirement and procedure appear to outweigh strongly any advantages which may be gained by a minority of state property owners who may benefit from leaving their subsurface estates off of property registers and off of local tax rolls. However, the law is such that it is difficult to devise a constitutionally acceptable procedure with enough economic power to induce the majority of severed mineral property owners to register their claims. If the ruling of the Bayfield Circuit Court on Chapter 260 is upheld, alternative means of registering these estates must be devised. Several proposals are presented below, and the various constitutional issues, legal precedents, or other barriers to the judicial acceptability of these proposals are discussed, in the hope that they may provide some insights and/or ideas as to acceptable alternatives.

Option A - Tax Delinquency Method

Description

One instrument available to policy makers would be to create a specific subclassification of real property to include all undeveloped subsurface mineral estates, both those severed from and those attached to surface estates; and to require the recording of title within a time limit specified by statute. A nominal minimum tax would be levied on all real estate falling into the defined classification, to be collected commensurate with the method(s) applied to all other real estate, as defined by the present State statutes.

A tax would be assigned to each and every subsurface mineral estate and would be listed on the local tax roll. If the claimant had made prior record of such claim, as required, he would be notified according to standard property tax notification procedures.

If the holder of title to the surface estate could not be identified, the notification of tax levy would remain on the local tax rolls for the required length of time; after that time the property would forfeit to the state (or county) for property tax delinquency. Standard procedures of public auction could be followed with provision for monetary reimbursement, subject to a time limit on claims to title.

Discussion

This proposal has several advantages over past proposals, in that it confirms the separate and unique classification of mineral properties allowed by Article VIII of the State Constitution:

> Rule of taxation uniform; income, privilege, and occupation taxes.... Taxes shall be levied upon such property with such classifications as to forests and minerals including or separate or severed from land as the legislature may prescribe. Taxation of agricultural land and undeveloped land, both as defined by law need not be uniform with the taxation of each other nor with the taxation of other real property. (Emphasis added.)

Article VIII appears to say that taxation of "undeveloped land" (a category into which the severed mineral estate should fall) need not be the same as the taxation of other real property. This exclusion may provide sufficient legal grounds for deviation from the standard ad valorem criteria used in the assessment and taxation of other real property, on the grounds that while the fair market value of a subsurface estate is difficult to ascertain, the rights associated with such title are themselves of some nominal value, which is uniform per unit of surface land area.

By levying such an across-the-board tax on the rights associated with such a property against both severed and unsevered estates, the violation of equal protection and uniformity could be avoided.

The inclusion of provision(s) for appeal of assessment and definition of procedures for public notification if the owner has failed to identify himself may be sufficient to satisfy due process requirements.

The major disadvantage of option A is that it places the burden of identification of the owner and/or determination of the market value of the property on the property owner if he wishes to defend his title and/or dispute the assessment made against the property. However, it is proposed that the tax levied on the property rights associated with the subsurface mineral estate be minimal, in that the major goal of such a tax would not be revenue, but rather the identification of claimants to title of the subsurface mineral properties in Wisconsin. Thus, the monetary burden on the small landowner would be negligible.

The other disadvantage of option A is that it makes no provision for taxation of severed mineral estates about which the assessor has information suggesting a higher market value implying some loss of tax revenues. Since such estates are not taxed at present, however, there will be no reduction of local government revenues in real terms but only the opportunity cost of the potential revenue of such property.

Option B - Escheat Method

Description

An alternative to option A would be to require all claimants to mineral rights, both severed and unsevered, anywhere in Wisconsin to register those rights with the Register of Deeds in the county in which the property is located within a previously specified period of time. Claimants would be required to indicate the basis of their claim to title of the property. The Register of Deeds would then establish a record open to the public in all counties, so that any party interested in appropriating a specific tract could readily identify each of the specific properties within the area of interest and the respective owners.

Failure to register a mineral estate within the specified time period would lead to the legal presumption of no known owner; and the local assessor would list the property on the local tax rolls as "owner unknown." The assessor would then value all mineral properties, whether the identify of the owner was known or unknown. If no owner appeared to pay the property taxes levied against the mineral right during a specified statutory period, the right to that property would "escheat" to the State. Escheat signifies "reversion of property to the state in consequence of a want of any individual competent to inherit" (Black, 1968, p. 74). The word escheat merely indicates the preferable right of the state to an estate left vacant, and without there being any one in existence able to make claim thereto (Black, 1968, p. 74).

Once title to the property reverted to the State, the State would have the option of conducting a public auction of the property; or of retaining title to some or all of the properties and leasing the mining rights to interested parties for purposes of exploration and/or subsequent mining, subject to royalties payments.

In the case of sale by public auction, any subsequent assertion of prior claims to the title to the property might be subject to a statutory limitation. Provision could be made for monetary indemnity, to be paid to any property owner who asserted his claim before the lapse of the time limitation, to equal the full market value of the property at the time of sale as established by the auction.

The State-ownership alternative would allow the State either to reimburse the claimant, as in the case of the sale of the land, or to return the title to the original owner, subject to payment of back taxes and penalties plus standard restraints on any interference with any operating lease arrangement already entered into by the state.

Discussion

The major difficulty with the approach defined by option B would be the assessment of the subsurface mineral properties. The difficulties associated with the actual valuation of an unexplored piece of property that is not visible have been a major deterrent to any taxation of severed mineral estates.

Sale by public auction would provide a solution for the assessment dilemma by establishing a market value for mineral estates of unknown value. The market valuation established through public auction could then be applied to other property which had not been subjected to sales proceedings.

Similarly lease arrangements could be used to establish market values, if the leasing alternative were chosen by the State.

Option C - Custodial-Escheat Method

Description

This method is an adaptation from the standard "custodial" type of abandoned property statute applied to unclaimed personal property which is presumed to be "abandoned."

As a subclassification of real property, severed mineral estates would not normally be subject to abandonment procedures applied against unclaimed personal property; however, the procedure may provide a conceptual base for the design of a similar policy to be applied to subsurface mineral properties.

Under such a proposal, any person could petition the State, for a determination as to whether a specific severed mineral interest should be presumed abandoned. The conditions of abandonment could be statutorily defined as judged advisable. A 1969 report of the North Dakota Legislative Council suggested that a severed mineral interest should be presumed abandoned unless as least one of the following were true:

1. The mineral interest had been assessed and payment of the property taxes had been made.

2. Within the last 30 years part or all of the interest had been conveyed, leased, mortgaged, devised, or had produced minerals in paying quantities.

3. An affidavit had been filed of records indicating that the owner wished to maintain his ownership in the interest, that is the property had been registered.

The property in question would be subjected to these three criteria, as well as any other information readily available to the state.

Notification of the owner by registered mail would be required (if the identity were known), together with publication of several notices in the county in which the property is located, advising that if the property were not claimed within some designated time limite, custody of the property would default to the State to whom all further claims must be directed. The property could then be leased by the State for purposes of exploration and mining.

Costs involved in this procedure could be deducted from the proceeds received and the remainder could be placed in either (1) the state General Fund or (2) a special "mining" fund to finance the reclamation of orphaned mine sites, front end impacts of future mining developments, further geological surveys, related environmental concerns, and further research into associated issues and problems.

The State would, in fact, retain the property in trust for the true owner, who, subject to provision of necessary evidence, would have the right to reassert his claim on the property, subject to any contractual arrangements presently binding, and to the collection of all back taxes, with interest.

The trustee position of the state could be subjected to a designated statutory limitation of, for example, 30 years, after which the property could be declared abandoned and sold at public auction, again with provisions to protect any leasehold interests operative at the time of the change of status of the property. (This issue might be avoided completely by congruent timing of the leases.)

Discussion

The procedure just described has the distinct advantage of avoiding any challenges to possessory rights relating to the forfeiture of title requirements which are an integral part of both the tax delinquency and escheat proposals. At the same time, it allows the exploration and possible active exploitation of presently dormant estates and all of the secondary benefits accruing therefrom.

The proposal also upholds the constituional rights of due process and equal protection while offering no challenge to uniformity requirements.

However, while this procedure has been commonly applied on the presupposition of abandonment of personal property in many states, its application to real property can only be postulated.

Option D - Dominant Estate Method

Description

The owner of severed mineral rights has "the right of the dominant estate", which, as explained previously, allows the owner of a subsurface mineral property to go onto the surface and mine the subsurface minerals at his discretion. This includes the right to introduce any necessary equipment and construct necessary capital fixtures, and to conduct any exploratory and extractive activities required for efficient removal of the minerals from the ground. The only legal responsibility of the mineral owner is to compensate the surface owner for any damages done to the surface and to provide ground support for any buildings on the land.

This proposal would require the registration of all subsurface mineral estates, both severed and unsevered, within a designated period of time. Failure to register such a property within the statutory period would result in revocation of the right by the dominant estate to the holder of title to the subsurface property. The effect of such a taking would likely be reflected through a sizeable reduction in the value of title to any mineral property without dominant estate provisions, and thus would create a strong economic incentive for the registration of these estates.

Discussion

It is likely that such a proposal would elicit much debate and would be subjected to judicial challenge on the grounds that the revocation of the right of dominant estate in effect constitutes an unconstitutional taking of property.

In such a case, benefits would be derived from both favorable and unfavorable judicial ruling: (1) either the court would uphold the statute as proposed, and property owners would be induced to register their subsurface claims; or (2) the proposal would be ruled unconstitutional, on the grounds that the rights associated with a subsurface property, the right of the dominant estate, does indeed constitute a part of the whole parcel with an economic value. Such a ruling might provide the state with a stronger basis on which to propose a uniform per acre levy on the value of the rights associated with ownership of a subsurface mineral property.

Option E - Tax Incentive Method

Description

The fifth alternative differs from previous proposals by employing positive rather than negative incentives to achieve statewide registration of subsurface mineral properties. In this proposition, a financial incentive in the form of a tax reduction would be offered to those property owners who are able to prove that they do not own the subsurface mineral rights beneath their surface properties.

Rather than requiring the property owner to provide proof that someone else had title, the state could provide a legal contract which would allow a surface property owner to disavow any claim to the subsurface estate beneath his property.

All subsurface properties thus disavowed or otherwise unregistered could then be placed on the local property rolls as "owner unknown." If not claimed within a statutory period, all such claims would escheat to the state, which would have the option of offering these properties for sale by public auction, or of leasing them for purposes of exploration and/or mining.

Discussion

The effectiveness of such a procedure would depend on a successful public information campaign, which, in addition to notifying property owners of the available tax reduction, would inform the public of the implications of owning or not owning the mineral rights beneath a surface estate. As evidenced by Pinkowitz' field study, many property owners are unaware of the legal implications of the dominant estate enjoyed by owners of severed mineral rights.

A major advantage of such a proposal is that it would provide a relatively simple instrument whereby surface property owners in the vicinity of a valuable mineral deposit would be able to disavow their claims to the mineral rights beneath their properties if these rights were known to have no commercial value. At the present time, some property owners in the vicinity of the large copper and iron deposits in northern Wisconsin believe they have been subject to a sizable increase in their assessments because of the unfounded speculations by others that valuable minerals are present beneath their properties.

There may be some difficulty initially in identifying an appropriate "incentive-sum" by which to reduce the taxes of property owners who disavow their claim to the subsurface rights. As evidenced by recent attempts to induce energy conservation through pricing increases, the financial burden must reflect the price sensitivity of the commodity in question to elicit significant response from consumers. A reduction in the individual property tax levy by $5.00 or $10.00 may not be sufficient to induce property owners to expend the necessary effort of disavowing claim. This issue would only be a problem during the initial implementation phase of the program, as the subsequent sale or lease of the disavowed claims would quickly set a market price for these properties which might then be used to calculate the incentive deduction for future disavowed claims.

If the incentive tax reduction initially deemed necessary was substantial, and if response to the program was high, the state aid formulas would increase contributions to local government budgets. This short-run subsidization of a tax reduction would be unlikely to place a significant burden on state revenue resources in the long run, as the eventual sale or lease of the mineral properties would be likely to more than cover any costs incurred in the interim. The state should also fund and assist assessors and registers of deeds in the educational and administrative tasks of implementing this or any other recommended solution to the problem of mineral rights in Wisconsin.

A FINAL NOTE ON ADVERSE POSSESSION

It has been proposed in the past that registration of subsurface mineral estates be required; and that if no claim would be made against the property with a specified time period, the property would accrue to the surface owner by right of adverse possession. However, in cases where action to quiet title has been taken by a surface owner with respect to the adverse possession of the mineral rights beneath his property, the courts have ruled adverse possession to be inapplicable.

> ...In North Dakota it has been held that, where the title to the mineral rights has been severed from the title to the surface, possession of the surface by its owner is not adverse to the owner of the minerals below it. The owner does not lose his possession by any length of nonuse, and the surface owner cannot acquire title to the minerals by adverse occupancy of the surface alone. Thus, possession of the surface is never possession of the subsurface for purposes of adverse possession... The face that the surface owner has no knowledge of the severance or believes that he owns the minerals, makes no difference. (Bilby v. Wire, 77 N.W., 2d 882, 889 (N.D., 1956; L. Junes and C. Taylor, 1960).)

Adverse possession is a method of acquisition of title by possession for a statutory period, subject to certain specified conditions:

> Adverse possession depends on the intent of the occupant to claim and hold real property in opposition to all the world... and also embodies the idea that the owner of, or persons interested in the property have knowledge of the assertion of ownership by the occupant.... Payment of taxes alone is not sufficient in itself to establish adverse possession. (Black, 1968, p. 74; Emphasis added)

The claimant by adverse possession is required not only to occupy the property in question, but actually to use the property.

This seems to imply that in order to gain title of a severed mineral estate through adverse possession, the owner must actively mine the resource in question, thereby running the risk of prosecution if the owner should appear, and the loss of funds invested in opening the mine.

An additional complication facing an owner willing to take the risk of mining the right might be in the fact that adverse possession statutes deal only with real property; but once minerals have been removed from the ground they become personal property.

> ...If...minerals have been removed from the land they are converted into personal property...(Sunes and Taylor, 1960)

As personal property, the minerals may not be subject to adverse possession as presently defined and their ownership may be inconclusive. Thus no recommendation is made that this concept be used to clarify mineral rights in Wisconsin.

CONCLUSIONS AND RECOMMENDATIONS

The five policy options, discussed in detail at the end of this chapter, may be summarized as follows.

Option A. Tax Delinquency-Forfeiture Method. The Legislature would create a subclassification of real property to include all undeveloped subsurface mineral estates, both severed and unsevered, and require recordation. Subsequent to the registration period, a nominal tax would be levied. If a holder of title did not appear and pay the tax, the property would forfeit to the state or county for property tax delinquency. Standard procedures of public auction would be followed.

Option B. Escheat Method. This alternative to Option A would require all claimants to mineral rights to register those rights with the Register of Deeds within a specified period of time. Failure to register a mineral estate within the specified time period would lead to the legal presumption of no known owner; the rights to that property would escheat to the state. The state would then have the option of conducting a public auction of the property or of retaining title and leasing the mining rights to interested parties. This option would allow the state either to reimburse an eventual claimant, as in the case of the sale of the land, or to return the title to the original owner, subject to standard restraints on any interference with the operating lease arrangement.

Option C. Custodial-Escheat Method. Any person could petition the state to make a determination as to whether a specific severed mineral interest should be presumed abandoned. Notification of any known owner by registered mail would be required, together with publication of several notices in the county in which the property is located, advising that if the property is not claimed within some designated time limit, custody of the property shall default to the state, to whom further claims must be directed. The property could then be leased by the state, as trustee, for purposes of exploration and mining. Costs involved could be deducted from the proceeds received and the remainder placed in the State General Fund or a special mining fund. The state would retain the property in trust for the true owner, for a statutory period or in perpetuity.

Option D. Dominant-Estate Method. This proposal would require the registration of all subsurface mineral estates, both severed and unsevered, within a designated period of time. Failure to register such a property with the statutory period would result in revocation of the right of the dominant estate to the holder of title to the subsurface property. The effect of such a taking would likely be reflected by a reduction in the value of title to any mineral property without dominant estate provisions and thus would create a strong economic incentive for the registration of that estate.

Option E. Tax-Incentive Method. A financial incentive in the form of a tax reduction would be offered to those property owners who are able to prove that they do not own the subsurface mineral rights beneath their surface properties. (State aid formulas would largely make up revenue thereby lost to local governments.) All subsurface properties thus disavowed would be placed on the local property rolls as "owner unknown". If not claimed within a statutory period, all such claims would escheat to the state, which would have the option of offering these properties for sale by public auction or of leasing them for purposes of exploration and mining.

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Chapter III

ZONING INCENTIVES FOR RESERVATION OF MINERAL LANDS

by

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ABSTRACT

Cultural nullification is the major cause of the reductions of the world's mineral resource base. The nullification, or prevention, of mining, especially of mineral aggregates, has occurred largely through adverse zoning restrictions and through building over mineral deposits. However, zoning and other types of land use controls that have been enacted or considered by various state and local governments in attempting to guide urban growth and preserve agricultural and open-space lands may be useful for the protection and orderly development of mineral lands in Wisconsin.

The analysis and application of state and local land-use controls, including various forms of zoning, to mineral resources in Wisconsin indicates that protection and regulation may be best handled on the local level. However, in order to provide for the orderly development and maximum utilization of these critical resources for optimum use and benefit to the citizens of Wisconsin and the nation, the State may wish to consider legislation that would encourage local land-use planning and zoning in areas with high potential for mineral development, increasing its programs of technical assistance in mineral resource identification and require that results of mineral exploration activities be reported to the State.

INTRODUCTION

Zoning is the method used to reserve lands for a special use, to prevent it from being misused, and thus to maximize its use potential consistent with the demands of society. The basis for zoning may be the natural-resource base, environmental conditions and preferences, or economic or social factors, or a combination of two or more of these. In any case, to assure that zoning decisions accomplish the will of society, it is essential that there be an accurate and sufficient information base. This section summarizes what is known of Wisconsin's mineral-resource base, the need for detailed geological and geophysical surveys, the concept and methods of land-use zoning, and the zoning incentives which can be used to provide for exploration for and development of Wisconsin's mineral resources consistent with least practical disruption of environmental factors.

According to the Association of Professional Geological Scientists, the major single cause of the reduction of the world's mineral resource base is the prevention of mining by various forms of cultural nullification. The nullification of mineral aggregate deposits (crushed stone and sand and gravel) essential to the building industries has occurred largely through adverse zoning restrictions and by building over mineral deposits. Environmental concerns which have led to the withdrawal of lands from prospecting and mining in some areas, represent another form of cultural nullification. Obviously, the process of precluding mineral development

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by whatever means will, in the long run, be harmful to society in some instances and beneficial in others. What is important is that the alternatives be recognized and considered in a reasonable manner, and that the role of mineral reserves be considered an essential element in the overall land use planning process. In keeping with the mandate of Chapter 318, (1973) Wis. Laws, which calls for a program of land-use policies and financial incentives "for the purpose of discouraging those uses of land which tend to preclude the mining of minerals lying beneath," this report emphasizes methods for overcoming forms of nullification. It should be kept in mind, however, that what is of real importance is that the place of mineral reserves in land planning be recognized and that systems be established for the management of these reserves, so that whatever decisions are made concerning minerals are made intelligently and take into account all the implications of mineral development.

This chapter will examine innovations in land-use controls which have been enacted or considered by state and local governments in attempts to guide urban growth and preserve agricultural land and open space. The applicability of these controls to the protection of mineral lands will be explored. The chapter consists of five major sections. The first will briefly review the issues involved with planning for mineral resources. The second section will examine two traditional land-use control mechanisms in Wisconsin: zoning and the powers of the soil and water conservation district. The third section will analyze innovative local land-use controls, and the fourth will analyze innovative state land-use programs. Finally, conclusions will be presented and recommendations made for management of mineral lands in Wisconsin.

PLANNING FOR MINERAL RESOURCES

In discussing the question of planning and zoning for mineral resources, we first need to make a distinction between mineral resources and mineral reserves. Because the earth is composed of minerals, the mineral resource base is the earth itself. Mineral reserves are tallies of commodities that have been measured or inferred as a result of extensive exploration and sampling. Reserves, then, are not all the potential resources but only those which have been measured sufficiently to be classified as reserves. The U.S. Geological Survey uses the following definitions (Pratt and Brobst, 1974, p. 2):

> Reserves--Identified resources from which a usable mineral or energy commodity can be legally and economically extracted at the time of determination.
>
> Identified subeconomic resources--Materials that are not reserves but that may become reserves as a result of changes in economic and legal conditions.
>
> Hypothetical resources--Undiscovered materials that may reasonably be expected to exist in a known mining district under known geologic conditions.
>
> Speculative resources--Undiscovered materials that may occur either in known types of deposits in a favorable geologic setting where no discoveries have been made, or in as yet unkown types of deposits that remain to be recognized.

Planning for mineral resources--and the land-use regulations used to implement the plans--must deal with a dual problem. First, there is the problem of identifying and reserving for exploration and development those lands containing or likely to contain valuable minerals. The second aspect of the problem involves regulating the mining activity itself, assuring proper reclamation, and managing the planned sequential use of the land.

The first aspect--planning for mineral reservation--depends on the use of geological surveys for an evaluation of existing and potential mineral reserves.

> Active and potential mineral production sites must be located to facilitate planning activities. Potential production sites can be identified from the bedrock geology, surficial geology, and over-burden thickness maps.... Target maps identify potential mineral resource areas based upon occurrence of favorable host formations, engineering constraints, and economic considerations. Target maps also show land used for current mineral production and land that may already be zoned for mineral reservation and extraction. These maps form the data base for mineral resource planning and management activities. (Friz, 1975, p. 52)

Geological surveys are essential for an evaluation of mineral resources, and the evaluation of mineral resources is, in turn, essential to a community's overall land-use planning program. As with other unique natural and historic resources, minerals are fixed in location by their very nature, are limited in supply, and must be conserved to insure their existence for future generations. Mineral resources should, therefore, be one of the factors considered in making land-use decisions. Geological surveys thus play an essential part in the overall land-use planning process.

The identification of target areas for various minerals based on resource data derived from geological surveys is only a first step in the management of mineral lands. Such evaluation might enable a municipality to identify those areas in which development that would preclude mining might be discouraged and exploration encouraged. It is, however, extremely difficult to plan for mineral reservation and extraction districts without precise knowledge of future mineral production sites. A detailed and often extremely costly exploration program is required to locate specific mineral deposits, and it is here that the partnership between government and the mineral industry may work to each party's advantage. The public geological surveys give the mining companies a basis on which to undertake detailed exploration, and this detailed exploration in turn can provide government with not only the location of economic deposits but the quantity of the reserve, the estimated time when production might begin, the potential life of the mine, and similar information useful in planning for mineral production.

Certain concessions are required from each side to make the partnership work:

> Mineral producers may be reluctant to disclose basic resource data for fear that local property taxes will be increased if the presence of mineral materials on the property is known. Some companies may also fear loss of a competitive advantage if the location of their future reserves is disclosed. On the other hand, failure to disclose resource data may result in loss of these deposits through zoning restrictions or land-use planning developed without knowledge of their presence. The mineral producer is thus caught in a difficult situation and requires certain assurances from the land-use planners before full cooperation will be obtained. (Friz, 1975, p. 54)

A successful program of planning for the reservation of mineral resources thus depends on geological surveys for a data base, a clear policy of including minerals in the overall land-planning program, and, in return for these public actions, the sharing by the mining companies of the detailed data from their explorations.

The second aspect of managing mineral lands involves planning for the sequential use of the mined land and regulating the mining itself to insure proper reclamation. Mining should be treated as an interim use of the land. The term sequential land use as applied to mining lands implies that mining is only one of several uses to occur on a given tract in a planned sequence. Planning for sequential use means that the land will be reclaimed and that the reclamation will be carried out in the most practical and efficient manner. The final use in the sequence planned for mineral lands is limited by certain physical constraints such as the size of the property, the depth of the excavation, and the quantity of waste, but the possible uses are many. In Wisconsin, mined land has been reclaimed for residential developments, lakes, shopping centers, nursing homes, industry, golf courses, parks, and agriculture. The uses to which the land can be put before it is mined depend largely on the lead time between the identification of the deposit and the commencement of mining. Certainly, agricultural, forestry, and conservancy uses are practical, and residential development might even be allowed, provided the development is not extensive and an agreement is reached that the use might have to cease prematurely. In this respect, trailer parks would be a nonconflicting residential use of mineral bearing lands.

In order to make use of a fixed resource in a way that maximizes net social benefits and minimizes problems, careful planning is obviously necessary. To insure that the planning is implemented, land-use regulations must be utilized. As indicated later in this report, the most effective means of regulating development on mineral-bearing lands will, in most cases, be carefully written and administered zoning ordinances, which can also be an efficient means of implementing the planned sequential use.

TRADITIONAL LOCAL LAND-USE CONTROLS AND MINERAL RESERVATION

Mineral Resource Zoning

The regulation of development on mineral-bearing lands through the zoning power is not specifically permitted in the Wisconsin statute enabling zoning. Zoning for industrial uses is, of course, permitted, and mining is certainly an industry. The use of zoning to reserve areas for mining would, therefore, seem permissible. Further, the general purpose of a zoning ordinance is to protect the public health, safety, and welfare by the separation of conflicting land uses which would create nuisances. Mining is generally incompatible with residential development because of the dust, noise, traffic, etc. associated with a mine, and the regulation of at least this type of development on mineral-bearing lands is justified for reasons of general community welfare.

The use of the zoning power to reserve and regulate mineral-bearing lands has been explored in The Model Mineral Reservation and Mine Zoning Ordinance by Jon Preston, Eric Strauss, and Thomas O. Fritz, (1974). The model ordinance is structured to provide for the reservation of mineral deposits, for their orderly development, and for the rehabilitation of the land disturbed by the mining. It is designed to serve as an addition to an existing general zoning ordinance and is to be used as a flexible model to be tailored to fit the particular needs of the county or town in which mining might take place. The model ordinance covers both the substantive and procedural problems involved with zoning for mineral reservation and management. A detailed description of the ordinance will not be repeated here; rather, a brief summary of the ordinance will serve to indicate how traditional zoning can be applied to mineral lands. The reader who wishes more detail is referred to Preston and others (1974).

The first section of the ordinance is introductory, and gives a general statement of purpose: the reservation and protection of mineral deposits and regulation of

mineral extraction. Stating that minerals are rare, fixed in location, and nonrenewable, the ordinance provides for the enactment of an amendment to the existing local zoning ordinance to prevent incompatible land uses, to protect deposits near urban areas, to prevent unwise development, to assure proper reclamation, and to provide the best economic growth opportunities and environmental management techniques. The second section, also an introductory one, provides definitions and is self-explanatory.

The third section of the ordinance creates mineral reservation districts. The location of such a district depends on geological surveys and several other factors:

1. Location of past and present land areas held for future extraction by mine operators.

2. The location, extent, and quality of potentially valuable mineral deposits.

3. Availability of potentially mineral-bearing land and feasibility of extraction.

4. Regional or local comprehensive plans.

5. Potential for effective multisequential use that would result in optimum benefit to the operator and to the residents of the county and adjacent districts.

6. Development and reclamation potential of the land.

7. The quality of life of residents in and around areas containing potential mineral deposits.

8. Maximization of short- and long-run benefits of mineral extraction.

There are two permitted uses in the mineral reservation district. One is forestry and the other is agriculture, including farm structures and single-family residences up to two units per farm.

There are two types of special exceptions in the district. Mining itself is a special exception, and the review and decision process on mining permits is contained in a later section of the ordinance. The second category consists of nonmining special exceptions. Following the model shoreland protection ordinance of the Department of Natural Resources, the ordinance provides exceptions for utilities, hunting and fishing, parks, and others. It would also be possible to simply make these permitted uses. A second class of nonmining special exceptions is more general and provides that any permitted use or special exception in an adjacent district may become a special exception in the mineral reservation district, provided that the use is subject to special conditions and may need to cease in favor of mining.

Finally, this section of the model ordinance outlines a process for review and decision on an application for a nonmining special exception permit. Two specific conditions may be attached to the permit, one providing for the removal of structures at a minimum cost and the other requiring a notice in the chain of title that mining might occur on that parcel. Additional conditions may be imposed.

This section of the ordinance is intended to fall under ordinary police powers and is thus not intended to be a grant of power to prohibit all uses of a parcel of

land without compensation. Some reasonable economic use of the property must be granted, and any conditions attached to use must not be so restrictive as to be unreasonable. Development pressures on the site and all alternative uses must be considered.

The next section of the model ordinance presents an alternative to be used in place of or in combination with the preceding section. This section provides for creation of a special exception for mining in an agricultural, forestry, or conservancy zone, and requires the zoning board to inquire as to the existence of mineral deposits on or near all sites on which other special exception permits are required. It is assumed that agricultural, forestry, and conservancy districts already limit intensive structural development through the use of the special exception, and that with the addition of mining as one of these exceptions, controls can still be exercised over mining in a jurisdiction in which mineral deposits are too numerous to be placed in a single zone. This section of the ordinance also gives a local government a degree of flexibility in situations in which deposits are not sufficiently identified by requiring the board to inquire about mineral deposits before granting nonmining special exception permits.

The following sections of the model ordinance deal with procedural matters such as application for regular and temporary mining special exception permits, the decision-making process for mining permits, bonding mechanisms to insure proper reclamation, provisions for existing mining operations, changes in the permit or reclamation plan, inspections, and penalties. Many of the steps outlined in the model ordinance are common steps for the granting of special exceptions and need not be detailed here. An important point to note is that standards are established on which a decision must be based, information required of the developer is detailed, and procedures for filing a reclamation report and for release of the bond are spelled out. In short, mechanisms are established in some detail, thus helping to insure the legality of the ordinance. The ordinance enables a community to control the mining and reclamation activities and thus implement the planned sequential use of the land. In the absence of such a plan, the reclamation provisions would be far less efficient.

It should be noted that the model ordinance contains a final section which might be placed in a county subdivision ordinance. Under this section, the body approving subdivision plats inquires about mineral deposits on or near the site of the proposed subdivision in a mineral reservation district. Subdivision approval may be denied for the purpose of protecting known deposits. This section provides an additional method of control for incompatible land uses for any county wishing to use such a tool.

In summary, it appears possible to use traditional zoning powers to control not only mining but development on mineral-bearing lands which might preclude the future mining of that land. This control can be achieved directly through the use of the methods outlined in the model mineral zoning ordinance. Such methods seem well suited to the reservation and regulation of metallic and nonmetallic mineral lands under development pressures. It should be emphasized, however, that a government cannot reserve mineral deposits for too long a period of time through simple police-power methods. If the danger or nuisance to the community's health, safety, and welfare is too distant or is only a remote possibility, excessive regulations would be illegal. The regulations must be reasonably related to the possible nuisance, and the owner of the property must be allowed a beneficial use of his property.

The Soil and Water Conservation District

It might be possible for soil and water conservation districts to exercise limited control over development on mineral-bearing land. Each county constitutes a district, and the district is governed by a board of supervisors (Wis. Stat. Chap. 92 (1973)). The district has certain powers, the most important of which for purposes of mineral lands protection is "to develop and amend comprehensive plans for the conservation of soil, water, and related resources within the district" and to "formulate proposed regulations for the use of lands lying within the district but outside the limits of incorporated cities and villages...in the interest of conserving soil and water resources." The land-use regulations enacted may include provisions "for the protection of lands exposed by grading, filling, clearing, mineral extraction and similar activities." Land-use regulations are proposed, after public hearings, to the county board by the district supervisors, with a recommendation that the board adopt such an ordinance. The county board may enact such an ordinance following approval of the ordinance by the voters in a referendum. No county has yet adopted such an ordinance.

Obviously, the purpose of the soil and water conservation districts as conceived by the legislature is to protect the soil and water resources of the state. The idea of discouraging those uses of land which tend to preclude the mining of minerals lying beneath was probably not envisioned in the enabling legislation. The statute does mention the use of land-use regulations for the purpose of protecting lands exposed by mineral extraction. Such regulations can "limit the size of the area to be exposed, the length of time and season during which it may be exposed, require establishment of temporary waterways, storm drains, temporary debris basins, terraces and other structural and nonstructural methods to control erosion, runoff and sedimentation." A preliminary conclusion would be that the powers of the soil and water conservation district are suitable for regulating mining activities but not for controlling nonmining development on mineral-bearing lands. For controlling mining itself, the powers would seem to be very adequate, and could conceivably be used to prohibit mining in an area because of its adverse impacts on soil and water resources in the district. The power to control reclamation would be meaningful if based on a plan for use of the land after the mining.

By broadly interpreting the concept and the powers of the soil and water conservation district, it might be possible to control development on mineral lands. As noted above, one of the powers of the district is to develop plans for the conservation of soil, water, and "related resources," and to specify in these plans "acts, procedures, performances, and avoidances which are necessary or desirable for the effectuation of such plans." Any land-use regulations adopted "shall be liberally construed in favor of the county and shall be construed as minimum requirements for the purposes stated and not as a limitation on other powers granted." Considering the language in these sections together, it might be possible to consider minerals a "related resource," to consider the restricting of development on mineral-bearing lands "avoidances" necessary to carry out a plan calling for the conservation of minerals, and to justify regulations carrying out such a plan under section 92.09 (5). This section states that the list of land-use regulations given in the ordinance which may be adopted by the county board is not an exclusive list.

Using the powers of the soil and water conservation district in this manner might be justified in situations in which the protection of mineral lands is desired but no county zoning ordinance exists or is likely to exist. The problem, of course, is that regulations under this act can only be enacted after a referendum vote, and it is possible that in a county in which zoning is unpopular, this form of land

regulation might also be unpopular. On the other hand, because a regulation under the soil and water conservation act would be specific and problem oriented, unlike a more general zoning ordinance, the regulation might be more politically acceptable. A further disadvantage to this approach to reserving mineral-bearing lands is that it would probably require a precise delineation of the mineral deposits, unlike the model mineral zoning approach, in which provisions are made for the regulation of development on mineral lands even when the precise location of the deposits is not known.

The powers of the soil and water conservation district seem intended and well designed to control the activity of mining, but that the powers were not intended to serve the purpose of managing development on mineral-bearing lands and must be re-interpreted somewhat to serve this purpose. In some instances, the district might be able to impose land-use regulations restricting development on mineral lands as an exercise of its authority to preserve natural resources.

INNOVATIVE LOCAL LAND-USE POLICIES

In this section we will examine some of the more commonly discussed new tools for managing growth at the local level and preserving open space. Growth management is a relatively new concept in the planning field and is clearly distinguishable from the old land-use controls, which had as their purpose the prevention of nuisances by the separation of nonconforming uses. There is a growing concern in many areas, however, that municipal or regional growth should be guided, slowed, or even stopped, and that traditional zoning controls cannot serve this purpose. Every government has a growth management system on at least a de facto basis in its various laws controlling, guiding, or in any way influencing development. The elements of such a system have probably not been thought of or legislated as parts of an integrated system, but they do act concurrently on development. More and more, it is being recognized by municipalities that they should design more integrated growth management systems. The tools discussed below are some of the elements that are beginning to appear in--or at least be discussed as possible parts of--municipal growth guidance systems. It should be emphasized that these are tools, no more. If these tools are not grounded in a set of clearly stated goals and in an overall community plan, they can be ineffective or illegal, or both.

The examination of the innovative local growth-control and open-space preservation tools will be in two parts. First, a general description of each tool will be given, including some of the problems associated with it, its more obvious implications, and examples of its use in various parts of the country. Second, an attempt will be made to judge the usefulness of each tool in terms of a situation in which mineral deposits need to be preserved for future development. Conceivably, different tools could be used for three separate purposes:

1. to preserve the mineral-bearing land from development which might hinder or preempt mineral development.

2. to eliminate the problems of potentially conflicting uses surrounding a mineral deposit.

3. to enable local governments to effectively control the timing, location, and quality of development in order to minimize the increase in public service costs caused by major mining operations.

This part of the report will necessarily be very general but will, it is hoped, give some indication of the applicability of these tools to the Wisconsin mining situation.

Eight tools will be discussed; some of them are variations on traditional zoning, and others are attempts to combine police and eminent domain powers; contract and conditional zoning; compensable zoning regulations; interim development controls (moratorial); less than fee simple acquisition (purchase of development rights or easements); transfer of development rights; bonus or incentive zoning; phased zoning; and subdivision regulations (requiring exactions). Because the complexities involved with many of these forms of land-use regulation cannot easily be summarized within the scope of this report, the interested reader is referred to the bibliography at the end of the chapter, and to where details of the various tools are discussed.

Contract and Conditional Zoning

Zoning with conditions is a tool designed to give a municipality some degree of flexibility in the rezoning process and to enable zoning officials to reconcile more easily the various interests affected by the rezoning. Contract zoning involves a rezoning, prior to which the landowner and the municipality enter into a contract in which the landowner promises to subject his property to certain restrictions in exchange for the rezoning. Conditional zoning occurs when the governmental unit, without committing itself in any way, obtains the promise of the landowner to limit in some way the use to which he puts his property. The difference between the tools is that in conditional zoning, unlike contract zoning, the unit of government has not committed itself to anything and has therefore not bargained away any future use of the police power.

In most rezoning cases, the applicant specifies what the use of the land will be. The specification is made because it is much easier to evaluate a rezoning in terms of a specific use than to judge its appropriateness for the wide range of uses permitted in the requested zoning district. Zoning with conditions might certainly be used to save the community money on the cost of services, if the contract or conditions required the landowner to pay for these services as a condition of rezoning. Also, land suitable for development but which has been passed over due to poor zoning could have development encouraged on it by working out of a conditioned rezoning.

For many years, zoning with conditions has had a troubled time in the courts, although judicial attitudes have changed somewhat in recent years. Contract zoning was formerly held invalid because a legislative function should not depend on contractual commitments of the zoning power (a bargaining away of legislative power) and because a government should not be allowed to surrender its trust to keep zoning ordinances in agreement with comprehensive planning. Conditional zoning was held invalid because it seemed to compromise rezoning in favor of the landowner's concessions, even though there was no commitment, and this "compromising" constituted prima facie evidence of spot zoning. Since the early 1960's, however, the courts have been more amenable to zoning with conditions as a way of encouraging beneficial land development (Scott, 1973).

The legal problems are certainly paramount when dealing with contract and conditional zoning. The major problems can probably be avoided if conditional rather than contract zoning is used (Goodall, 1972). Perhaps a more basic problem with contract and conditional zoning lies not in the fact that they are legally suspect but that they are a one-way process, that is, the use of these devices presumes a change to a higher or more intensive use. They are not devices for holding areas to their presently zoning or existing uses.

In theory, the possible applications of zoning with conditions are almost limitless because it allows local officials to work out a "deal" with every rezoning. As mentioned in our discussion of the technique, however, a change to a more intensive use is assumed with the use of conditional zoning, and its application to the problem of preserving mineral lands from development is questionable.

The major problem, after the legal questions, with conditional zoning in a rural community is that it demands legal expertise on a continuing basis. Traditional zoning ordinances can be derived from model ordinances or prepared by consultants, but the use of conditional zoning requires legal expertise every time the procedure is used to insure that in the agreement the developer is bound to whatever conditions the municipality wishes to impose, and to insure also that the municipality has bargained nothing away.

Compensable Zoning Regulations

Compensable regulations are a tool combining compensation with normal police-power regulations to avoid the problems of an unconstitutional taking that might be involved in strict development restrictions.

Basically, development rights are taken from a landowner by means of a very restrictive zoning classification, and the landowner is compensated for the difference between what his land would have been worth if he had been allowed to develop it fully and its value at its regulated use. The municipality zones for a restrictive use, condemns for the remaining rights not in conformity with the zoning, and reimburses the owner. Usually, when a zoning regulation would be so strict as to constitute a taking, the issue would be settled by either rezoning for an acceptable use or creating a nonconforming use. The compensable regulation allows the local government a third option when both rezoning and conditional use are undesirable solutions.

A modification on this approach links the compensation to the fluctuations of the market. Compensation is not paid at once, but only when the landowner sells his land on the open market. There is a governmental guarantee that when the owner sells his property in the open market, he will receive a price equal to the market value of his property just before the controls were imposed. In this way, the landowner loses no money, although he might not gain as much as with unrestricted property. The cost to the government is probably less under this technique and can even be zero in cases in which the land, even at its regulated use, sells for a higher price in the future than it would have at its full market value just prior to the regulation. (For a more detailed examination of this technique, Krasnowiecki and Strong, 1963).

This tool, of course, gives a community much greater control over development than traditional zoning, which relies on the police power alone. The tool is designed for open-space preservation and for protection of environmentally sensitive areas. The costs to the compensating unit of government can be great--particularly under the first method presented.

One question of legality arises over the power of eminent domain. A government must have a public purpose for condemning land; whether or not guiding development is a proper public purpose justifying public acquisition has yet to be definitively decided.

The most obvious problem is the one of cost. A second problem is that a certain level of expertise is required in determining the value of what has been

taken and how (or whether) to spread the costs through special assessments.

To date, there has been very little experimentation with this type of regulation. The two forms of compensable regulations presented above seem to be reasonable methods for preserving mineral deposits. The main difficulty would probably be the cost involved and the legal questions of public purpose. The administration of either of the methods might present difficulties in rural areas not familiar with a process of condemnation or with the long-range planning demanded by such a technique.

The major advantage of compensable zoning over traditional zoning in a rural area is its long-range and permanent aspect. In a rural area, where growth pressures do not exist, traditional zoning would seem a suitable regulation for keeping development from mineral-bearing lands. Mineral deposits identified now, however, might not be mined for decades, at which time development pressures might have changed radically and traditional zoning might be inadequate to prevent development. The imposition of compensable regulations at such a future time would be more expensive than imposing them years earlier would have been. The trade-off is that if compensable regulations are used now, the land would be preserved but there might be unnecessary public costs if development pressures do not materialize; if compensable regulations are not imposed at the earliest possible time, some costs might be avoided, but long-run costs could be greater. It should be noted, however, that mining companies will usually protect reserves by purchase of the land, thus eliminating the need for public action.

Compensable zoning does not appear to be well suited to the prevention of over-capitalization and the increased costs associated with unplanned and rapid development in a boom-town situation. It is far simpler to deal with this type of situation, where and when it occurs, through several of the other techniques discussed in this report than to become involved in the administrative problems and costs associated with compensable regulations. Compensable regulations in the implementation of an overall development plan can surely be very effective in an urbanizing region, but in a rural community faced with sudden development, more discretionary and development-reactive controls such as conditional zoning, subdivision regulations, and bonus zoning are probably more effective. Such controls do not rely as heavily on long-range planning and are certainly less costly.

In sum, compensable regulations, despite the problems mentioned earlier, offer at least a reasonable means of preserving mineral-bearing lands and of perhaps providing a buffer around such deposits to prevent uses not suitable in close proximity to a mine. A landowner must be allowed some reasonable use of his land, and in situations in which development pressures are strong and low density zoning might be considered overly restrictive, compensable zoning would be one alternative. Such a technique seems particularly suitable for use in urbanizing areas in which valuable nonmetallic deposits, particularly sand and gravel deposits, need to be protected. In these areas, the planning capabilities needed for this approach are more likely to exist. Because these controls can be expensive and can set a precedent that undermines noncompensable uses of the police power, compensable zoning regulations should probably only be considered for the protection of significant and obviously endangered deposits.

Interim Development Control

The purposes of interim controls is: (1) to gain a reasonable period of time--a breathing space--and public involvement can occur; and (2) to prevent development

which might establish uses that are likely to be prohibited once the new ordinances and plans under consideration are enacted. Interim zoning controls, then, are intended simply to preserve temporarily the status quo in a municipality, or sections of it, pending adoption of a permanent implementing regulation.

An interim control ordinance is passed by the local legislative body under the powers of the state zoning enabling act. Basically, permits are denied during the planning process, and requests for rezoning are also denied.

The controls are nothing more than a temporary tightening of present controls rather than an expansion of the usual police powers, but used in conjunction with an on-going planning process then could probably enable the actual physical configuration of the zoning jurisdiction to conform more closely to the de jure districts. One undesirable result could be that development would be encouraged in neighboring jurisdictions not covered by the controls. If imposed for long periods of time, the controls could mean serious hardships for small local developers, and could, in extreme situations, undercut the economic base of a community.

The recurring dilemma in drafting an interim zoning ordinance is determining which types of development should be prohibited and which allowed. Although a complete moratorium might be desired, the courts have rarely allowed complete prohibitions. Another problem is that interim controls adopted in response to specific development proposals have great potential for abuse, and should only be exercised when a community could not have reasonably anticipated and prepared for such a proposal.

The two most significant and widely known examples of the use of interim controls to date come from Florida's highly developed southeast coast. In Boca Raton, a series of moratoria was established in November, 1972, and extended through March, 1974, to enable replatting and rezoning. All housing construction except of single-family dwellings and duplexes was prohibited.

In Dade County, Florida, a process closer to the true concept of interim controls is in effect. This is a unique process in which interim controls can be imposed on parts of the county rather than on the entire county. A request is forwarded by a town or a citizen of the town to the county commissioners, who then decide whether controls are necessary and define the area on which they are to be imposed. The county manager is given a time limit within which an assessment is made of the area's land use and zoning. Recommendations are then made on appropriate zoning districts for the area. While a moratorium is in effect in an area, no variances, special permits, zoning district changes, etc. are acted upon unless expressly exempted by the county commission.

A variation on the moratorium is practiced in Aspen, Colorado. Building permits are considered for approval only once or twice a year. This gives local officials a chance to evaluate trends in building and the cumulative impact of individual applications.

The use of moratoria can have far-reaching consequences, as the controls might last longer than similar controls imposed for planning purposes, and an effort is not always made to remedy the situation to accommodate growth. Thus, the moratorium can be used as a powerful growth-control device. Moratoria imposed in response to specific developments or anticipated overloads on public facilities can contribute to hardships and inequities for small builders, discrimination against apartment and other high-density housing, encouragement of urban sprawl to jurisdictions not

covered by the controls, and discouragement of moderate-income housing because of the increased value of available land.

Interim controls are inherently temporary and are certainly not designed for the long-term or permanent protection of mineral-bearing lands. Such controls might be well suited for controlling development that might impose excessive public service costs. An interim zoning ordinance would conceivably apply in the case of a town learning that a major mineral deposit was to be developed in its area in the next several years. In such a case, a municipality might want to rezone or adopt a zoning ordinance or other land controls in preparation for expected development. While an area usually has substantial advance notice, an interim ordinance might be desirable to insure that costly or low-quality development does not occur while permanent controls are being studied.

A moratorium on development would conceivably be an effective short-term control on mineral land development. Interim controls might be imposed when a valuable mineral deposit first comes to public attention, with the intent of insuring that development does not take place over the deposit while local plans are revised to include this new factor. Provided the controls are short term and are meant only to give local officials a chance to update the community plan, a proper use is being made of the moratorium.

Finally, an approach similar to Aspen's semiannual review of building-permit applications might be an aid in a small community facing rapid development because of a mining operation. A review of the applications every three months or so would have the same effect as a short-term interim zoning ordinance and could be used for the same purpose.

Less Than Fee Simple Acquisition (Purchase of Development Rights or Development Easements)

The purpose of this kind of acquisition is to preserve open space or guide the placement and timing of development through public acquisition.

Unlike compensable zoning regulations, the purchase of development rights does not necessarily involve a rezoning and condemnation. The rights are often negotiated for with individual landowners, in areas chosen to be kept open. A positive easement allows public access for a specific purpose--hiking, hunting, fishing, or other purposes. A negative easement prohibits the landowner from using his land in specified ways by taking away certain rights usually bound up in the fee simple title. Usually, the right to develop the land in specific ways is sold by the landowner. An easement may run in perpetuity or for a specified number of years.

The physical and economic effects of easement purchase are similar to the effects of compensable zoning regulations. That discussion will not be repeated here. An additional effect, not mentioned in the report on compensable regulations, is that the landowner can make a gift of the easement rather than selling it, thereby qualifying for a deduction from his taxable income equal to the fair market value of the rights donated.

In Wisconsin, easements have been purchased for years by the State as part of a program to preserve scenic roadsides and to provide public access to natural areas. Cities and villages can condemn less than fee interests, but the question of public purpose might arise if the sole purpose is to control development.

Theoretically, and sometimes in practice, the purchase of development rights is a workable tool for preserving open space and protecting critical environmental areas. In rural areas away from the demand for development along the urban fringe, easements can generally be acquired at low cost. There is less opposition from farmers than with outright purchase of the entire fee because they can still work their land, and property taxes will be imposed on the land at its restricted use value. On the other hand, the land still stays on the tax rolls to some extent and thus does not impose too great an additional burden on other taxpayers.

Easements can prove an ineffective tool when used with the intention of making significant changes in the present use of the land, as opposed to being used to keep land in its existing state. The National Park Service, which has probably had more experience with the tool than anyone, has discontinued its acquisition of easements, stating, "On the basis of 20 years of experience, such easements breed misunderstandings, administrative difficulties, are difficult to enforce, and cost only a little less than fee." (Levin, and others, 1974, p. 89)

In addition to the purchase costs, there may be problems and costs in administering the acquisition process and policing the restrictions over time to insure compliance.

The purchase of development rights would seem to be an excellent tool for insuring that development does not occur over valuable mineral deposits and, to a lesser extent, for providing a buffer between the proposed mining area and existing development. The great advantage of easement acquisition is that it is a permanent tool. Once the easement has been secured, there is no need to monitor and attempt to steer development away from the mineral deposit. Efforts would need to be made to insure that neighboring uses would not conflict with any mining in the future, but this type of conflict could best be avoided by means of normal zoning ordinances with a special permit provision for the areas where conflicts might occur. (See the discussion above of the model mineral reservation and mine zoning ordinance.)

The major problem with the use of any public acquisition program is, of course, the cost. Because of this, acquisition should probably not be considered a prime tool for reserving mineral-bearing lands unless the odds of development on those lands seem reasonably high, and unless there is a reasonable assurance that the deposits are so significant that they will likely be developed in the foreseeable future. While land acquisition costs will be lower the farther in advance of mining they are incurred, the apparent bargain could well be a waste of public money if the odds of future development are not weighed carefully.

As a tool for preventing the costly over-expansion of public services in a rapid-growth situation, public acquisition does not seem suitable. A rapid-growth situation would most likely occur in small communities in rural areas. Such a situation could not be anticipated far in advance because of the many variables involved, and the control of development would be far easier and less costly if other tools were used. Different forms of moratoria, incentive zoning, and subdivision regulations are more suitable reactions to the more immediate problem.

Transfer of Development Rights

By reconciling eminent domain and police powers, attempts to avoid the inevitable either-or-choice involved when a low-density resource is subject to pressure for development to a higher use.

Transfer of development rights severs the development potential from a parcel of land and permits the transfer of that potential--the transfer of the development rights--to a parcel of land where greater density will not be objectionable. There are a number of proposed schemes for using transfer of development rights--as a means for preserving landmarks and environmentally sensitive areas including agricultural and recreational land, and as a basis for a total system of land planning. All the different proposed uses involve compensation for the owner from whose land the development rights are severed, either by allowing him to sell the development rights himself or by providing for compensation by the public body which serves as an intermediary between the original owner of the rights and prospective buyers. In any transfer of development rights system, zones must be designated in which the development rights can be put to use--zones in which the added density will not be harmful. It is essential, of course, that a market for the development rights exist. This market will exist either because of "natural" intense development pressures or because a market has been created by the use of other development controls which limit density in certain districts to levels far below the demand for development in those districts.

The most obvious economic impact is that the owners of restricted land are compensated, with the compensation coming at least partially from real estate developers who must buy the development rights to be able to build above certain densities in specified areas.

Bonus or Incentive Zoning

Bonus or incentive zoning enables the community to obtain certain features or amenities from a developer in exchange for the granting of a zoning change or other income-generating benefit to the developer (usually an allowance for increased density).

Specific incentive plans are developed and written into the ordinance to apply to specific zoning districts. By making development within these areas more desirable and feasible, growth in areas where development is less desirable can be curtailed somewhat through positive rather than negative means. It is possible to write the ordinance so that any development plans in the district are reviewed by the municipality, which can then review the bonus-benefit options.

Bonus zoning certainly allows for greater flexibility and more variety in a given area than does traditional zoning. There are financial benefits to the developer, who is allowed to use his land more intensively than would normally be permitted. (Almost all bonuses involve an increase in density.) There can also be substantial cost-savings to the community if public services such as sewer and water are provided by the developer, and the community can presumably save money on services even if they are not provided by the developer simply because growth can be clustered somewhat through the use of this tool. Further, the economic characteristics of an area can be changed if, in exchange for a given bonus, the developer is required to provide low-income or mixed-income housing.

A major problem with the use of bonus zoning for preserving mineral-bearing lands is that the bonus will probably be a density increase, which might not be a particularly important incentive in a rural community. A second problem is that a bonus zoning ordinance presupposes that zoning exists in a community, which is not always the case. Bonus zoning could only serve as a means of reinforcing the restrictions applied in a traditional zoning ordinance by helping to steer development away from those areas to be kept free from development. The most likely useful application of bonus zoning would be in a situation in which large sand and

gravel deposits, for example, are located on the edge of an expanding urban area.

Phased Zoning

The term phased zoning refers to several techniques, each with a somewhat different procedure which have as an underlying purpose the timing or sequencing of development. In one type of phased zoning, the zoning ordinance is coordinated with a capital improvements program in a sequence such that development will be permitted in districts where facilities exist, and such that services will be provided to those areas in which development is timely. The best-known example of this type of system is found in the Ramapo, New York, plan. Before a permit can be granted, a total of 15 points must be accumulated from five service categories. The point system is based on the availability of sewers, drainage facilities, parks, roads, and fire stations. The developer provides the services at his own expense if they are not available and thus gains the points.

A different type of phased zoning is designed to avoid the problem of property being rezoned for a specific purpose, only to have the developer fail to conform to his proposed plan. If a certain number of acres are to be rezoned from an agricultural to a residential status, the rezoning could be implemented on a phased basis by rezoning only a part of the total acreage immediately and--in the same ordinance--providing that the next area will be rezoned automatically upon completion of the development in the first area.

Phased zoning has also been defined as "simply a series of rezonings," a lumping together of a series of steps often taken individually by a municipality (Urbancyzk, 1975). A local government can decide that a parcel should be restricted to residential use, next can decide that the area is presently not suitable for development or subdivision, and finally can decide that the land will become suitable for subdivision only upon the occurrence of certain conditions. In effect, this form of phased zoning incorporates subdivision regulations in the zoning process as does the Ramapo scheme and makes use of the "holding-zone" concept as well. Holding zones are restrictions temporarily imposed, usually on rural lands, to prevent development in outlying areas before areas closer to municipalities and serviced sectors are developed.

The holding-zone concept in itself presents a form of phased zoning. Under the concept, a community might be divided into three zones or planning areas:

a. The built-up portion of the community where little land suitable for development remains.

b. Land on which public facilities are provided or will be provided soon.

c. Land not to be served by public facilities for several years, and which is restricted to residences on very large lots, or to agricultural and other open-space uses until the area is changed to a planning area, when services can be provided (Hysom, 1974).

This type of control is one of timing growth and, when not abused, will have that effect, not the effect of stopping or limiting growth. The phased-zoning process can provide substantial savings to the local government, either by having the developer pay for the facilities (as is possible in the Ramapo system) or by at least allowing the local government to pay for the facilities when it is able.

In addition to the legal and political problems mentioned above, there are administrative problems with any zoning procedure which is related to capital facilities programming. A carefully prepared comprehensive plan and capital improvements program are needed before the planning agency can determine which lands are to be designated for development and which are to be temporarily withheld. Few communities have the capability and desire to prepare a plan of this detail and quality, which is probably the main reason that the approach of zoning tied to capital programming is not more widely used.

The phased-zoning methods discussed earlier would seem to apply to at least the objective of preventing mining-related development patterns that would significantly increase public service costs. Examples of such development are housing built in areas requiring a significant extension of sewer and water lines and housing built at a time when the local government cannot afford the increased cost of services or new capital facilities. Any type of phased zoning is, of course, tied to a long-range plan and includes a capital facilities programming component. Because of this, a high level of expertise is required to develop and administer this type of control, which might very well put it out of the question in rural areas where significant mining is likely to occur.

Subdivision Regulations

Subdivision regulations are enacted to insure that adequate public services are available when land is converted into building sites, to control the timing or sequence of development, and in some cases to hold down the public service costs of new development. Conventional subdivision controls allow for a review of a proposed subdivision (1) to assure that facilities are available, (2) to enforce lot size, setback, and other provisions in the zoning ordinance, (3) to insure purchasers of lots suitable for development, and (4) to enable government to coordinate the work of adjacent developers. Mandatory dedication of parks, sewer and water facilities, roads, land for schools, and even school buildings can be required as a condition of plat approval.

Subdivision controls by themselves allow a community to control the quality of a development but not necessarily the size or location. When used in conjunction with other techniques, such as capital improvements programming, subdivision regulations can be utilized to sequence development. Subdivisions can be delayed or even denied where there is a showing that the subdivision will cause severe off-site environmental damage or will increase the burden on already inadequate public facilities.

It might be possible to use subdivision regulations to help preserve lands with known valuable deposits from development. The model mineral reservation and mine zoning ordinance provides for the establishment of mineral reservation districts, in which permitted uses are agriculture and forestry. Special exception provisions are included for review and approval of other developments within the district. The model ordinance also includes a section, to be added to a county subdivision ordinance, which provides a standard for judging the suitability of land in a mineral reservation district for subdivision. The planning commission, which approves subdivisions, inquires during the review about mineral deposits on or near the proposed subdivision site. If deposits are known to exist, the subdivision can be rejected as unsuitable after a public hearing. The Wisconsin subdivision enabling statute gives counties the power to regulate subdivisions more strictly than the general statewide standards. The authorization for judging the suitability of land in a mineral reservation district for subdivision stems from Wis. Statutes 236.45 (1) (1973), which allows for a determination that a site is or is not

suitable for subdivision.

Conclusions

It should be apparent that the innovative growth management tools discussed above do not present a great many feasible solutions to the problem of controlling development on or near mineral-bearing lands in rural areas. A general conclusion would have to be that, in rural areas containing mineral deposits but experiencing no growth pressures, the most effective means of controlling development on mineral lands is through traditional zoning. Areas containing minerals can simply be zoned for agriculture, forestry, or conservation with or without special exception provisions relating to mining (as in the model mineral zoning ordinance), or mineral reservation districts can be established. In areas experiencing growth, presumably urban fringe areas, several of the tools discussed above might work well in combination with a zoning ordinance to reserve mineral lands. The most applicable of these tools are probably subdivision regulations, various forms of phased zoning, and bonus zoning. Each of these land-use tools has been successfully used in guiding development, and if used with the mineral reservation district outlined in the model ordinance, could provide an adequate means of reserving the sand and gravel deposits vital to the construction industry in urban areas. For preventing the over-expansion of facilities that may be associated with the rapid growth of a mining development, the most useful tools again would probably be the most traditional ones--zoning and subdivision ordinances. Beyond these, different types of moratoria might be effective stopgap measures, but the ramifications of such measures, as outlined earlier in the report, should be fully appreciated.

Two further conclusions are indicated from the discussion of innovative local controls. First, the use of any regulation to reserve mineral lands assumes that there exists a knowledge of where those lands are. Often this is not the case. The need for more detailed geological surveys to indicate those areas with the greatest potential for mineral development is clearly indicated. Second, it should be noted that it might not always be desirable to use the tools described above to reserve for mining those lands identified as containing reserves or having a high potential for mineral development. The decision as to what use to allow on the land is one that must be made on a case-by-case basis, and only after a thorough consideration of the economic, social, and environmental factors involved. What is important is that communities have the tools, should the public decide to reserve the lands for mining, for effectively guiding away from these lands development that would preclude mining. This analysis of traditional and innovative land-use controls gives a basic indication of which tools might be most effective at this time for use by local governments. A second major set of land-use policies is focused at the state, rather than local level. Possible state policy alternatives are discussed in the next section.

STATE LAND-USE POLICIES

Introduction

Several arguments could be made to justify a state role in protecting mineral-bearing lands. Mineral lands--particularly those containing metallic minerals--are frequently mentioned in discussions of "critical resources" or resources of more than local significance. Several reasons are suggested for such a designation. First, mining, along with agriculture and forestry, provide the raw materials which are the basis of our state and national economies. Second, minerals are a nonrenewable resource and must be developed where they are found; interdependencies

between states and nations for essential minerals are inevitable. Finally, the environmental effects of mining certainly have significance which extends beyond local boundaries.

In recent years, many state legislatures have discussed, and some have passed, laws to protect critical resource areas. The laws have been developed primarily to protect environmentally sensitive areas such as wetlands, and to insure that the statewide interest is represented in development decisions--the siting of energy-generating facilities, for example--which will have impacts extending beyond local boundaries. While these laws have not been enacted for the sole purpose of reserving mineral lands, one alternative for mineral reservation might be to apply such laws directly or in modified form to the problem of reserving critical mineral resources. Following a brief examination of two states which are engaged in direct statewide zoning programs, our attention will turn to a review of the "critical areas" legislation passed in several states. The report will conclude with an analysis of the application of these various state programs to the reservation of mineral lands in Wisconsin.

Statewide Zoning Programs

Hawaii

In 1961, Hawaii passed legislation establishing four statewide zoning classes: urban, rural, agricultural, and conservation. In 1964, an official state map went into effect, and the zones were applied to specific parcels. The state and the counties share the administration of three of the categories; the conservation zone is strictly a state responsibility. In the agricultural and rural zones, the counties have the authority to issue permits for development; although the state has veto power, the local decision usually stands. In the urban district, the county specifies the actual use--commercial, industrial, residential, etc. The county can also override the urban designation by specifying parcels within the urban zone for rural or agricultural use. In effect, then, the local units and the state share land-use controls, with the state setting the guidelines.

In general, it has been noted, the law has preserved certain natural areas and encouraged a more continuous development pattern than would probably have occured with a strictly local system of zoning. On the negative side, it has been argued that Hawaii's system of state zoning has not brought any broader or more enlightened interests to bear on land development questions, and it seems that beyond the original designation of the zones, the state has little actual impact on land use decisions outside the conservation zone (Linowes and Allensworth, 1975; Bosselman and Callies, 1971).

Vermont

There are two major components to the Vermont Land Use and Development Control Law enacted in 1970. The law established nine district commissions and a state board to consider development plans. In towns with zoning and subdivision regulations, the board considers subdivisions of more than 10 units and commercial or industrial development of more than 10 acres. In towns with no zoning or subdivision regulations, the state regulations apply to residential developments of more than one unit and commercial or industrial projects of more than one acre. Specific decisions by the district commissions and state board are based on criteria set forth in the legislation, and will eventually be based on a statewide land-use plan, complete with map, which is now in preparation. The criteria include a

a determination of the proposed development's environmental impact, the availability of and impact on local public services, and its impact on scenic and natural qualities. The final state land-use plan, if adopted, will be based on the criteria already set forth and will contain a map showing each parcel of land in the state and how it is to be used. This second phase of the land-use program is more like traditional zoning and is, of course, highly controversial. If and when the land-use plan is adopted, Vermont will be engaged in true state zoning in which uses will be specified prior to development proposals. The land-use plan as drafted would mandate that all lands in the state be classified according to seven classifications established by the state. If local units of government fail to draw up land-use plans and implement them with zoning consistent with the state plan, the state is directed to step in and set up local plans and zoning maps (Linowes and Allensworth, 1975; Kusler, 1972; Bosselman and Callies, 1971).

Critical-Area Controls

The second, and most widely discussed, way for the states to guide land use is through the "critical areas control" approach. Basically, this approach calls for state supervision of development of local land use regulations in areas of state or regional concern, or over developments with more than local impact. The American Law Institute's Model Land Development Code (Proposed Official Draft No.1, 1974) proposes that critical areas can be defined in two ways:

1) An area significantly affected by, or having an effect upon, an existing or proposed major public facility or other area of major public investment.

2) An area containing or having a significant impact upon historical, natural, or environmental resources of regional or statewide importance.

The second designation will be our main concern, as it is protection oriented and deals with the regulation of significant resources. Several states have taken steps toward this type of regulation.

Colorado

A 1974 Colorado statute provides for state controls to be exercised in areas of state interest and over activities of state interest, the latter being generally limited to the selection of major public facility sites. The legislation contains general rules for the administration of controls in areas of state interest and lists in detail the guidelines to be applied in implementing the rule. For example, the law states as a general rule that "floodplains shall be administered so as to minimize significant hazards to public health and safety or to property" and then defines more clearly how it should be administered. This extensive listing of the guidelines in the legislation is an innovation which separates Colorado's approach from the American Law Institute model code and from Florida's much publicized legislation.

The administration of the law is delegated to the local level. The state land-use commission adopts guidelines for the designation of critical areas and suggests their designation as such, but the local units of government actually designate the areas and adopt guidelines for their administration, provided these local guidelines are consistent with the rather specific ones in the statute. In the case of a local unit of government rejecting the state commission's suggestion that an area be designated an area of state interest, the commission cannot override the local decision but must find recourse in the state courts. A permit system

is established at the local level to insure review of any development plans in designated critical areas. Approval is governed by the guidelines enacted for the area, and denial is again subject to judicial review not to a state adjudicatory board.

Florida

Florida's law, the Land and Water Management Act of 1972, is somewhat broader than Colorado's, as it applies to critical geographic areas and to developments of regional impact. The definition of the term critical area is quite broad and includes historical, archaeological, and natural areas as well as areas affected by major public investment. No more than 5 percent of the land in the state is to be subject to supervision as a critical area at any one time. Developments of regional impact include airports, recreation facilities, hospitals, industrial plants, residential development, and mines. To be classified as developments of regional impact, projects must have an impact over more than one county.

The designation of critical areas and adoption of standards for developments of regional impact are carried out by a commission composed of the governor and his cabinet. The commission may adopt and cause to be implemented local land-use regulations for any local governments which fail to adopt adequate regulations. The Department of Administration's Division of State Planning is the key agency in the Florida scheme. The division recommends specific areas of critical control by specifying the boundaries of the area, stating the reasons why the area is of critical concern, identifying the dangers that would result from uncontrolled development in the area, stating the advantages of coordinated development, and recommending guidelines for development. The division determines whether local regulations comply with the state-established guidelines and develops land regulations for the local government if need be. Standards for development of regional impact are also recommended by the division. One of the main advantages of having this type of power placed in the Division of State Planning is that the division is a staff as opposed to a line agency, and is thus in a better position to coordinate the activities of all the state agencies that might have an operational relationship to the land management program.

To prevent abuse of the Land and Water Management Act, an adjudicatory commission was established consisting of the governor and his cabinet, the same body which establishes the principles and guidelines. This apparent conflict of interest has been criticized by several commentators on the Florida legislation. The conflict is presumably mitigated by the fact that the Department of State Planning actually draws up the guidelines and standards and recommends areas to be designated as critical, although the governor and his cabinet must approve the recommendations (Mandelker, 1975; Council of State Governments, 1973).

Oregon

Oregon does not have a single, consistent critical areas statute such as Florida. Oregon emphasizes local planning in all areas, not just those areas designated critical. In 1969, Oregon passed legislation providing that after December 31, 1971, if there were any lands within a county that were not subject to a comprehensive land-use plan or a zoning ordinance, the state would prescribe and administer comprehensive land-use plans and zoning regulations (for these lands). The act described what comprehensive physical planning should provide and a list of goals for such planning. Subsequent legislation has established a state

commission to oversee planning and zoning for functions of special significance such as public transportation, sewer and water systems, and school and power plant siting.

Oregon has also passed legislation calling for a study of critical areas and providing for a report to the legislature on potential critical area designations. In the Oregon plan, unlike the Florida legislation, designation of critical areas would be carried out by the legislature rather than by a state agency or an executive committee. Beyond the designation step, the Oregon critical areas control would differ from other states in that it is only one part of a much wider program of state control based on mandatory local planning and state review of those plans (Land Use Planning Reports, Inc., 1974; Mandelker, 1975; Council of State Governments, 1975).

Maine

There are two approaches taken in Maine--the regulation of large commercial, industrial, and residential developments through a permit system and the review of local plans and land development regulations within critical areas. Obviously, a mine might be considered a "large development," and mineral lands might be considered "critical areas."

The 1970 Site Location Law required large industrial and commercial developments to obtain permits from the Board of Environmental Protection. The board can place conditions on the use of particular sites and can deny a development permit if the environmental impacts are sufficiently serious. Developments regulated are those which require a license from the commission under its pollution-control powers, those occupying over 20 acres of land, those which contemplate excavating or drilling for natural resources, and those which have a total floor area of 60,000 square feet on a single parcel. Commercial developments include residential subdivisions in excess of 20 acres and residential developments requiring a pollution permit. The commission is an independent body whose ten members are appointed for three-year terms by the governor. Decisions of the board may be appealed directly to the state supreme court within 30 days, and review is confined to deciding whether the record of the permit hearing contains substantial evidence to support the board's order, and whether the board acted within the scope of its authority.

Maine's 1974 Critical Areas Registration Act has as its purpose the encouragement of the preservation and utilization of critical areas through planning, regulation, and public acquisition. Critical areas are defined as areas containing "plant and animal life or geological features worthy of preservation in their natural condition, or other natural features of significant scenic, scientific, or historical value." The act is administered by the State Planning Office through its Critical Areas Advisory Board, whose members are appointed by the governor. The board and the planning office establish and maintain a register of critical areas. A landowner must be given 60 days notice before any land is classified as critical, and the planning office recommends to the appropriate state agencies action to be taken, be it acquisition or the establishment of management agreements to insure preservation of the critical area. The landowner, in addition to complying with all applicable state and local regulations, must give the state 60 days notice before commencing any alteration of a critical area. This gives the state an opportunity to acquire the land in its natural condition if it so desires.

Minnesota

In 1973 Minnesota enacted a law governing development in critical areas. These areas were defined as those containing or having a signficant impact on historical, natural, scientific, or cultural resources of statewide significance and those significantly affected by or that affect an existing or proposed government development. The state Environmental Quality Council recommends to the governor areas for critical designation and guidelines for development in each area. The council consists of eleven members and is headed by the Director of the State Planning Agency. The other ten members include five cabinet officers, four citizens appointed by the governor, and a representative of the governor's office.

Local governments and regional planning commissions initiate proposals for designation of critical areas. The law requires hearings and the governor's approval before any area is designated. The governor's designating orders describe the boundaries of the area, state the reasons for the critical designation, specify standards and guidelines, and indicate acceptable and unacceptable types of development. Following designation, local governments can issue development permits only in line with the guidelines in the designation order. Within 30 days of designation, existing local and regional plans and regulations regarding land use and development must be submitted to the council for a check of conformity with the critical-area guidelines. If within six months no plans are presented, the council is empowered to draw up its own plans. The plans are reviewed and updated every two years (Ohio Legislative Service Commission, 1974).

American Law Institute Model Land Development Code

Although it has not been adopted verbatim by any state, the critical areas section of the American Law Institute code is worth mentioning in its own right. The second of the critical areas clauses, mentioned in the introduction to this section, is protection oriented and is intended to authorize state review in sensitive physical environments, but the language is broad enough to include major ecosystems and resource areas. The code provides for a state planning agency to proceed through a rule-making rather than an adjudicatory process. Following hearings, the agency designates the critical area by rule and states the reasons for the designation as well as the policies to be applied within the area. Several states have given the legislature a stronger role in the designation and establishment of guidelines for critical areas.

The American Law Institute code does not make the designation of critical areas dependent on a state plan, although the code authorizes a state plan and recognizes that critical areas might be designated on the basis of studies carried out as part of the planning process. The relation between the critical areas designation and local planning is also a tenuous one. The state agency has power in critical areas not over local plans, which are not required and will not always exist, but over local land development regulations. The state planning agency has no power to review local plans directly, and thus cannot directly change a local planning element which contradicts state planning policy. Instead, the code provides for review and modification of local land-control regulations if they are inconsistent with state policies for a critical area and provides for state adoption of regulations in critical areas for the local governments which have no regulations. The state-adopted regulations may include any controls that local governments are authorized to adopt in their ordinances. The code limits review

of local regulations to that part of the local government's jurisdiction covered by the critical area, and state-mandated local regulations are to apply only within the boundaries of the critical area. The administration of any state-mandated controls remains with the local government. State review is thus confined to regulations, not plans, and to the text of the regulations but not to decisions made on the basis of the regulations.

Decisions made by the local governments on development within designated critical areas can be appealed, by the developer or the state planning agency, to a state adjudicatory board authorized to hear appeals on developments of regional impact (the other half of the proposed American Law Institute state review authority). The provisions governing appeals do not contain substantive review standards but only procedural standards. Thus, the board can review only whether or not the local government's decision is consistent with state policies for critical areas and with local regulations implementing these policies (Mandelker, 1975).

Application of Innovative State Land-Use Programs to Mineral Resources in Wisconsin

Because mineral resources have more than local significance, one alternative for protecting mineral lands in Wisconsin might be some form of state zoning or critical areas program. An analysis of the various state land-use programs summarized above and of several recent reports recommending a stronger state role in land-use management in Wisconsin will lead to conclusions as to the state's possible role in reserving Wisconsin's mineral lands.

The most direct form of state land-use management--zoning at the state level--would seem a very problematic way to reserve mineral lands. The uniqueness of the Hawaiian situation is obvious: Hawaii's urban areas, unlike those of other states, can only grow so far. The need for strict controls on growth at the local or state level is more necessary, recognized, and acceptable in Hawaii than in states with room to grow. A second factor contributing to the acceptance of state zoning in Hawaii is that land ownership is very concentrated; over 85 percent of the land in the state is owned by less than one hundred individuals, corporations, and trusts, and the government. Private holdings include nearly all the prime agricultural land. This pattern of concentrated control of the land is a long tradition in Hawaii, in direct opposition to the experience of most other states. This absence of a large group of small landowners and the long tradition of central control dating back to tribal days have tended to make centralized zoning acceptable in Hawaii. Finally, the small size of the state makes administration of centralized controls relatively simple. Statewide zoning in Wisconsin would be extremely difficult administratively, and perhaps unacceptable politically. The experience with the recommendations of the Land Resources Committee and the widespread opposition to Assembly Bill 882 (1973 Legislature) make the state zoning alternative seem quite unlikely.

The Vermont Land Use and Development Control Law is also a response to a very specific situation. As discussed above, the Vermont law is as close to state zoning as a state can come and still deny that it is engaged in zoning. Certainly, the elements of the law that involve the review by district commissions of developments of regional impact is an idea that could be applied in other states. The proposed land-use map, however, with its implications of complete state zoning, must be considered at this time as a unique response to a unique situation. The Vermont legislation was prompted by a resort and second-home

boom in the 1960's and by several large-scale recreational land development proposals. Such pressures do not exist in Wisconsin on the same scale at this time.

Vermont also epitomizes the ideals of local control, rugged individualism, town-meeting democracy, and hostility to the concept of zoning, particularly state-level zoning. But in Vermont, the tradition of town rule seems also to have given some push to the land development act. The tradition of home rule seems to have elicited a resentment on the part of many Vermonters to the perceived hordes of "outsiders" invading the state.

> Native Vermonters who supported it included farmers whose land was being pressed by new uses and whose taxes were sharply escalating where the land was taken for some new use. But it would be wrong to underestimate the "negative" motive, and that was a resentment of outsiders and the feeling that the legislation would somehow "punish" them, and perhaps keep them out altogether (Linowes and Allensworth, 1975, p. 80).

While the tradition of home rule in Wisconsin is strong, it is not coupled with the type of development pressures experienced in Vermont which caused a groundswell of support for both critical areas controls and comprehensive state planning and zoning. Direct state zoning does not appear to be a reasonable alternative to the protection of mineral lands. Only two states have considered such a program, and only in response to unique historical situations and current development pressures. In addition, a statewide zoning program encompassing zoning for the protection of mineral lands would be based on a knowledge of mineral deposits. Such detailed knowledge does not exist at present and is extremely difficult and expensive to acquire.

Probably more applicable to the protection of mineral lands in Wisconsin is some form of critical areas control, in which a state exercises control over certain geographical areas or over certain types of development of regional impact, such as a mine. Perhaps the most far reaching of any critical areas program is that enacted in Florida, which closely follows the American Law Institue code, except in its 5 percent provision. In his examination of the Florida legislation Kusler found several features which he felt should be incorporated in any Wisconsin critical areas statute: (1) recommendations of areas to protect should be made by both state and local governments; (2) all local units of government within critical areas should submit new regulations to the state agency for approval; (3) the state agency should adopt regulations for local governments within the designated areas that fail to do so; (4) local governments must give notice of proposed developments in the area to the state planning agency, which would be particularly useful in a large state like Wisconsin, where monitoring local development might be difficult; (5) a regional planning commission, should be required to comment on the impact of a proposed development, which assures that some expertise is provided to local governments faced with a decision; and (6) a state appeal board should adjudicate decisions made by local governments (Kusler, 1972).

Florida planners have emphasized several lessons to be learned from their first experience with their state's critical areas program: the designation of the Big Cypress watershed as an area of state concern. Four lessons stand out: (1) local governments must be included in the process, because they will not administer a program they do not understand or approve; (2) a massive education effort is needed to show people the goals of the program; (3) the staff needs are

great, it takes an estimated 3500 hours of staff time to handle the designation of a critical area; and (4) the data are not available for judging the system. Obviously, the third and fourth points take on extra meaning in relation to the designation and regulation of mineral areas in Wisconsin. The complexity of defining a watershed would probably be minor compared to the problem of defining a mineral reserve. Mining companies spend millions of dollars and years of exploration to identify mineral reserves; to expect the state to undertake similar efforts is unreasonable. The data needs for designating watersheds or scenic areas are great, but the data needs for designating hidden mineral resources except in a very general way are such that the problem is probably best handled by the private sector.

A final lesson, emerging from the section of Florida's law regulating developments of regional impact but applicable also to the critical areas section, is that the institutional structure was not adequate for the tasks involved. Fewer than half of Florida's counties have zoning and subdivision controls, and regional planning was nonexistent or notoriously weak. In the absence of local controls and experience with the administration of controls, local administration of the new law presents great problems. Such problems may not be as great in Wisconsin, where town and county zoning is relatively more established. However, the same problems could be expected at the state level.

The major feature of the Colorado legislation is the inclusion in the state statute of detailed substantive guidelines for the administration of controls in critical areas and over activities of state interest. In the Florida legislation, rules and guidelines are adopted by the adjudicatory commission, and in the American Law Institute code by the state planning agency. Presumably, the placing of this power in legislative hands was to avoid placing too much power in the hands of a state agency, and may have been a necessary provision for the passage of the bill. The Colorado act might also be criticized because the state has no real control over the designation of critical areas or the local guidelines for the administration of these areas. The local units can reject both the state's recommendation that an area be designated critical and the state's suggested modifications of local guidelines. The important point is, however, that the framework for a state role in management of critical areas is established.

Of interest in the Oregon legislation is that designation of a critical area is not carried out by the local governments as in Colorado, nor by a state commission as in Florida, but by the legislature itself. This again probably represents a concession to political realities and a basic dislike of conferring so crucial a power on an administrative agency. Of interest also are Oregon's mandatory planning provisions, which predate the critical areas legislation and insure that critical areas designation and control take place within a comprehensive state and local planning effort.

The Maine critical areas act is similar to Florida's in that designation is primarily the responsibility of the state planning agency, although the advice and approval of a board appointed by the governor is necessary. Maine's earlier site location law establishing a state permit system for large developments is perhaps the strongest of its kind and, like the Vermont state planning and zoning law, was prompted by a sudden awareness in the 1960's that the state was vulnerable to unregulated development by "outsiders." New interstate highways were brining state within a day's drive of places as far south as New Jersey. The expanding energy needs of the Northeast and the realization that Maine was the only northeastern state with natural ports deep enough to handle the new oil supertankers

gave further impetus to strong legislation controlling undesirable development. It can only be mentioned that, as in the Vermont case, direct state control of development in all areas, not just in critical areas, was the result of unique attitudes and pressures.

Minnesota's law is similar to Florida's in that the designation process is initiated by local governments and regional planning commissions. While Minnesota's law does not go as far as some other states in the control of private development, it does carry the important provision that not only local regulations but local and regional plans are subject to state review. Further, it provides that the governor's designating order indicate acceptable and unacceptable types of development within the area. Minnesota thus seems to avoid in part one of the major problems with the American Law Institute code--that the state agency is authorized to review and amend only local regulations, leaving complete administration of the regulations to the local level. Mandelker (1975, p. 26) has pointed out several problems with this aspect of the code:

> This approach has the disadvantage that state supervision will have only a marginal impact on the administration of most land development controls at the local level. The reason is that local development control administration has increasingly shifted from a system of preregulation based on adopted ordinances to a system of administrative control in which individual applications for development are reviewed one at a time subject to generalized ordinance standards. When local land development controls are administered in this fashion the impact of state review will be marginal if state review is confined only to the text of the regulations and does not reach the decision taken in individual cases.

In short, because of the discretionary nature of many local controls, many argue that review power over the controls is not nearly as important as review of the decision itself or of the elements of local planning.

Another problem pointed out by Mandelker (1975) is that a review of regulations alone assumes that all local land-control ordinances are codified into one document. The American Law Institute code provides for this along with its critical areas controls, but the fact is that this has not happened and is not likely to happen overnight. Without this codification, however, states will have to review all the local ordinances that might be applicable within the critical area. This reviewing task could become extremely difficult, of course, as state involvement in critical areas becomes more widespread and specific.

One way around this problem is a provision for the appeal of local decisions to allow development within critical areas. Another way would be to make the state guidelines and standards very specific, but this could cause problems in large critical areas in which it would be impossible to predict ahead of time what type of development will occur and where in the area it will occur. It would, of course, be extremely difficult to enact specific guidelines for mineral reserve areas without knowing where the reserves are located and whether or not they will be mined in the near future. Because metallic mining operations are tied to an international corporate and market structure, and to technological changes, it is difficult to forecase when individual deposits will be mined. As mentioned, a requirement for local development plans and for review of these plans creates an intermediate level between local regulations and state guidelines, and would probably make implementation of state standards more likely. If local

plans, including capital improvement programs, are required along with state review of plans, the state will be able to suggest modifications of any elements of the local plan which tend to contradict state policy for the area.

Some form of critical areas legislation would be one way for the state to exercise greater control over the preservation of critical resource areas and development in those areas. Such legislation has been much discussed in Wisconsin in recent years, and at least two major reports have recommended the restructuring of state land-planning and regulatory functions to insure that the statewide interest in resource areas of more than local significance is well represented.

In February, 1973, the Wisconsin Land Resources Committee issued its final report. The committee proposed a mechanism for state management of critical areas. The committee recommended a two-part system to deal with the regulatory aspects of State land-use issues:

1) Legislation would identify land resources of State concern and determine policy objectives. The legislature would establish resource management goals for each category of land resources issues.

2) A State land-planning agency and a state land appeal board would be established to carry out the policy objectives.

The State land-planning agency would develop standards for each category of significant State land resource concerns, and the standards would apply to the local government having regulatory power over the land resource issue. The effect would be to require a local government to adopt or modify its ordinance or to require that additional questions be addressed in the local review of development proposals. Hearings would be held on the standards and would be reviewed by an advisory committee, including local officials, before adoption. The State planning agency would have no power to compel acceptance of its suggested regulations but could appeal local rejection of its suggestions to the state land appeal board. The approach is much more cautious than that recommended in many states, but is notable in that it involves both the legislature and local governments in the state regulatory procedure without completely undermining the effectiveness of that procedure. Much of the committee's recommended program was introduced into the 1973 Legislature as Assembly Bill 882. The bill was not well received, and the major objection seemed to be to the increased state activity in, and authority over, what have traditionally been town or county decisions. An integrate bill (such as A.B. 882) has not been introduced since 1973, although critical areas bills have been proposed for wetlands, farmland, conservancy land, historic sites, and scientific areas.

A 1972 report for the Faculty Land Use Problem Definition Seminar, State Land Planning and Regulatory Functions, by John Kusler, outlines a series of reforms for Wisconsin which take into account much of the state legislation examined above. The proposals involve the creation of a new state planning office with regulatory powers over designated critical areas and over some developments of regional impact, and the creation of an independent adjudicatory board. The proposals go farther, however, in calling for a restructuring of local government procedures and powers and of some state agency procedures. The proposals for reorganization of planning commissions are too detailed for presentation here, and the reader is referred to the original paper. The paper presents a draft bill to improve the state's role in land planning and regulation. It is intended, the author states, "to stimulate thinking," and is closely patterned on the Florida Land and Water Management Act.

From analysis of the critical areas acts passed in several states and the Wisconsin reports dealing with mechanisms for an improved state land management system, it is possible to isolate several key issues for a critical areas act and the implications of these issues for the protection of Wisconsin's mineral lands by means of such an act. First, there should be local government input into the designation process, including the nomination or designation of such areas directly by local governments. Cooperation between state agencies and local governments on the question of which areas are to be designated would be necessary for the administration of such a program. Second, because local governments will have to play a large role in administering the program, and because the program would probably need to be tied to an integrated state and regional planning program if it is to be effective, familiarity at the local level with planning and land-use controls is important. This implies that a program of technical aid to local governments to help them develop plans and land-use controls would be needed, either prior to or as a part of the critical areas legislation. The Wisconsin reports and the experience to date in other states indicate that a critical areas program can be greatly hindered by the lack of a coordinated planning function at the different levels of government. Finally, on the basis of these points and the Florida experience, it is obvious that the time, money, data, and staff needs of a comprehensive critical areas act are great. As mentioned in the discussion of the Florida act, the time involved in designating a watershed known to be important to the entire southern part of the state was unexpectedly long.

These issues take on added importance if mineral-bearing lands are to be considered critical areas. The initial problem would be in defining a critical mineral area. Should critical status be given to those lands with known reserves lying beneath? Should mineral resource areas, those lands which are geologically favorable for the discovery of specific deposits but on which specific deposits have not yet been located, also be designated as critical areas? (See the definitions at the beginning of this chapter.) In addition, the problems involved with the identification of mineral reserves or resources are far more complex than with the identification of other types of areas of critical state interest. The years of exploration and enormous amounts of money invested in the identification of reserves by the mining companies indicate that this is an activity best handled by the private sector. Public geological surveys can identify those areas in which detailed exploration might prove most successful and can thereby aid mining companies in their efforts and aid the state in the identification of those areas which have a high potential for mineral development. Because of the extremely high costs, it is probably not possible to use public surveys to identify reserves. The question, then, is whether it would be advisable for the state to formulate land-use standards and guidelines for areas which present only the possibility for mineral development. In the case of identified reserves, it is likely that by the time such information becomes public, the mining companies with an interest in the reserve will have already taken steps, such as purchase of the land, to protect their interest.

Simply on the grounds of the detailed data problem, it would seem that a critical areas approach is not the best way to reserve mineral-bearing lands, and that it would not be advisable to legislate such a program with the reservation of mineral lands as one of its primary motives. The problem of unpredictability of the mining of metallic deposits once they are identified--a problem based in changing technology and in the international structure of mining operations--would also make the administration of controls in the area difficult.

Finally, the question must be asked whether the critical areas approach and its complex administrative structure, including integrated local, regional, and

state planning, might not be too ambitious an approach to the problem of reserving mineral lands in rural Wisconsin, where intense development pressures do not exist now and probably will not exist in the foreseeable future.

A slightly different approach to increasing the State interest in certain areas involves an increase in State participation in the management of specifically defined functional areas, such as floodplains and shorelands. The State would exercise the same types of controls as under the broader critical areas legislation, but the area in which the State could act would be more clearly defined than under a critical areas act. The idea of functional controls thus involves breaking down the broad areas of state interest into specific areas and defining the state interest in each area in individual pieces of legislation. Such an approach is recommended by Linowes and Allensworth in The States and Land Use Controls, and is based on their analysis of Maryland's attempt to pass a broad critical areas bill similar to the ones mentioned above.

In 1974, Maryland considered legislation providing for state-level land-use planning and direct state control over areas of critical concern. Such areas could include, but not be limited to, coastal areas, historical sites, areas around major highway interchanges, areas of regional interest in which development decisions would have a substantial impact on the plans, natural resources or public facilities of another jurisdiction, and areas where development would mean the irretrievable loss of natural resources. A state land use board was to designate the areas, draw up the rules and guidelines, and establish state controls when the local governments failed to do so. The board was to be composed of members appointed from specific counties, because the counties are the strong local units of government in Maryland. The big suburban counties, where state controls were most needed, were given direct representation on the board. Local interests were further protected in that the state plan was required to include all local plans that were consistent with state policies. Finally, local governments were given administrative responsibilities in all cases. By the time the bill was passed, it was amended to the point of almost total ineffectiveness. The state can recommend critical areas, and the director of state planning can advise local governments on development decisions within critical areas, but the state has no veto or control over local development decisions within these areas. It is also the local governments who nominate areas for critical designation, not the state. (Of course, it can be argued, as Mandelker does for the Colorado act, that the basic framework has been established.)

Linowes and Allensworth offer three reasons for the defeat of the broad critical areas legislation.

1) Officials from key local governments were not given a hand in drawing up the bill. The panel appointed by the governor to propose the legislation included local citizens and officials, but the panel did not draw up the bill; it was given to them by state administrators.

2) The decision-making board under the proposed law was to be made up of representatives from the counties as geographical areas but not necessarily from the county governments. The counties apparently used their influence in the legislature to defeat the measure.

3) The concept of critical areas was far too broad and was open to far too much interpretation at the state level. Even the lieutenant governor, for years a private land-use consultant and advocate of land-use planning, professed not to know what the term covered. Local governments knew that the

bill involved zoning, either by the state or according to their standards, over unspecified areas, and so chose not to gamble and lose local zoning and planning powers.

Linowes and Allensworth feel that broad critical areas legislation will fail in many states for similar reasons and suggest as an alternative state controls in specific functional or geographical areas. Such legislation would be passed separately and would allow the state to inject the statewide perspective in carefully defined areas (Linowes and Allensworth, 1975, p. 124):

> It seems that one way of relieving local governments of some of their fears is to couch specialized state zoning in more definitive terms and to restrict it to particular and concrete categories of use such as power plants and surface mining, or to areas like floodplains, wetlands, and coastal zones.... In many respects, these are just the kinds of things envisioned under the "critical areas" approach, and the only difference is that the first class specifies the limitations and particular targets in clear terms, while the "critical areas" approach does not. It is true that the state "gets more" via the critical areas, but it may also end up getting nothing at all by that route, too.

Their conclusions, then, are twofold. First, because of the political fact that the country's politics and administration are highly specialized and localized, specialized forms of state controls are likely to be more successful than broad critical areas legislation. Second, local controls should be brought into accord with state standards by a thorough revision of local planning and land-use controls enabling legislation. This second approach would recognize political realities, injecting a wider perspective into local development decisions without taking them over. In recent years several states have taken such measures by modifying and in some cases reversing their enabling statutes for local units of government.

The analysis by Linowes and Allensworth suggests that Wisconsin mineral lands could be regulated in a manner similar to floodplains and shorelands. Such an approach could make use of the guidelines for the identification of critical mineral lands used in the Critical Resources Inventory Program (CRIP) at the University of Wisconsin, Madison, over the last few years. In the CRIP recommendations, "significant" resources are first identified. The designation would apply to general resource categories such as forests, lakes, mineral deposits, historic sites, and so forth (Institute for Environmental Studies, 1974).

> A significant natural or cultural resource is or will be in short supply in a portion of the state, the entire state or the nation. In addition, a significant resource is valuable in terms of one or more of the following: economic value, recreational value, research value, educational value, psychological value, philosophical value, or human health and safety.

Each significant resource would be further defined. Mineral resources, for example, would be deposits of earth materials from which a usable mineral commodity may be extracted profitably, given existing or anticipated changes in technology and/or economic conditions. This would include both proven reserves and unknown deposits that may be inferred to exist but have not yet been discovered.

The term critical, in turn, refers to geographically defined areas in which one or more significant resources are found. Within these areas state policy could be implemented. The CRIP recommendations suggest that a general-level approach be adopted which serves to delineate large areas in the state where deposits are potentially critical. More detailed analysis would in turn focus on individual potential deposits within these areas. This approach is reminiscent of the floodplain regulations in Wisconsin, Minnesota, and other states. General floodplain regulations were devised on the basis of approximations of flood hazards. If a landowner wishes to develop lands within the area, he is required to seek a permit. The regulatory agency then makes a more specific determination of floodplain hazard on a case-by-case basis.

Legislation for critical resource areas, and this would apply to critical mineral areas, must establish, through more detailed studies, both the general need for the regulation and the fact that a certain land contrains this important resource.

> Traditionally, "Euclidean" zoning involved detailed data gathering in advance of adoption of regulations. In contrast, many zoning efforts for natural resource areas across the nation are based upon more generalized data gathering prior to adoption of regulations, but detailed data gathering occurs at the time particular development is proposed within the critical area. From a legal standpoint, this is defensible since the ultimate basis for regulation is the detailed data rather than the more generalized data (Kusler, 1973, p. 10).

The importance of the detailed data studies cannot be overestimated, since the "vast majority of attacks upon controls is not upon the general validity of the restriction but the reason of the regulation as applied to a particular property" (Kusler, 1973, p. 4). The problem, of course, is that in the case of mineral deposits, it is often extremely difficult to justify the application of the control to a particular property because precise data on mineral deposits are lacking.

The difficulties with regulating mineral lands along the same lines as floodplains are similar to those noted in the discussion of the broad critical areas approach. The major stumbling block to the effectiveness of this approach is also the information problem; a general determination of where mineral deposits are likely to exist and a determination on a case-by-case basis of individual deposits are both very problematic. The question also remains whether this comprehensive an approach is necessary in the rural areas of Wisconsin, where metallic mineral development is most likely to occur.

The implication of the discussion of the Maryland legislation and the idea of breaking down broad critical areas legislation into functional areas is that the state interest in important resource categories should be legislated separately and that the state interest in mineral lands could take the general form of floodplain and shoreland regulations. While this approach does not seem to solve the major problems of mineral land reservation inherent in the comprehensive critical areas approach, it does suggest that each resource category should be treated separately. Carrying this concept a step further, it might be argued that not only should minerals be treated as a unique resource category, but that within this category a distinction needs to be drawn between metallic minerals and non-metallics, including the mineral aggregates used in the construction industry.

Colorado has taken the first step in this direction by recognizing that the state interest in the reservation of metallics and in sand and gravel deposits will take different forms.

Colorado's broad critical areas act provides for the designation of mineral resource areas, although to date none have been specified. In addition, recent legislation is geared specifically for the protection of sand and gravel deposits from urban development. The law provides that no local government will permit the use of any area known to contain a commercial mineral deposit in a manner that would interfere with the present or future extraction of such a deposit. Each local government is required to conduct a study of the commercial mineral deposits within its jurisdiction and develop a master plan for the extraction of such deposits. Whenever a subdivision or commercial or industrial activity is proposed which will cover 5 or more acres of land, the municipality in which the activity is proposed must report on the activity to the state land-use commission and the state geologist.

> The state geologist shall, upon receiving a preliminary plan...or major activity notice...review such plan or notice to determine whether the development or activity...will interfere with the extraction of commercial mineral deposits.... If the state geologist determines that a potential for such interference exists, he shall, within 24 days...notify the...governing body of a municipality of the existence of such potential interference (Chapter 92, Colorado Revised Statutes, quoted in Rold and Schwochow, 1975).

While the law technically applies to all minerals, the intent was and the effect has been that the law applies to sand and gravel deposits necessary for the construction industry.

The Colorado state geologist has reported that the law has worked very well and has had a marked effect on preserving commercial sand, gravel, and quarry aggregate deposits in the urbanizing areas of the state. (The law applies only to counties having a population of 65,000 or more, which corresponds to the urbanizing counties along the eastern slope.) Several counties have developed master plans for mineral extraction and are carrying out the objectives of the law. The Colorado legislature thus determined that mineral resources--particularly sand and gravel deposits--are of significant value to society as a whole, that these resources were being denied to society by urbanization at a much faster rate than they were being used, and that the state had a proper role in regulating the protection and use of these minerals. The legislature attacked the immediate problem of diminishing sand and gravel deposits in specific legislation and by including those resources in the language of the state critical areas program.

In effect, Colorado has pursued the approach to mineral management advocated by the American Institute of Professional Geologists in its draft guide, Understanding Mineral Resources. The report draws a "sharp distinction between the techniques of resource management of inexpensive mineral commodities and the management of relatively expensive mineral commodities." Mineral aggregates used in the construction industry are high-bulk, low-value minerals and are therefore very transportation sensitive. The cost to the user is highly sensitive to transportation costs, and producing such materials as close to their market as possible will keep the cost of the building to the consumer as low as possible. Because population centers are the major market areas, the management of mineral aggregate reserves falls naturally under urban or local planning. Colorado has

recognized this by requiring local planning for mineral resources in the urbanizing counties of the state.

The other half of the mineral resource problem involves the management of the more costly minerals--basically, those found in world trade. Deposits of these minerals are rare and difficult to find and generally occupy a small area relative to their value. Because of their national and international importance, and because such deposits are less likely to be economic in urban areas, the American Institute of Professional Geologists' report suggests that their management does not rightly fall at the local level. The Colorado legislation follows this reasoning and places the management of minerals other than aggregates more under state control by establishing a framework for the designation of these minerals as areas of state interest in the state critical areas act.

The important point to emphasize is that the Colorado legislature drew a preliminary distinction between the different types of mineral deposits needing to be managed and recognized that the state interest in each type should take a different form. It might be argued that the form which has been legislated is not the correct one, but at least the internal complexities of the term mineral resources have been recognized.

In summary, there are serious problems in trying to apply to the reservation of mineral lands in Wisconsin state policies which have been discussed and enacted in various parts of the country for protecting environmentally sensitive areas. The problems stem from the complex nature of both the mineral industry and the mineral resource itself, and from the complex interrelationship between local and state government in Wisconsin and elsewhere. The most fundamental problem is the data requirement; a critical mineral deposit must be identified before it can be protected by critical areas legislation.

CONCLUSIONS AND RECOMMENDATIONS

Mineral deposits are unique in nature in that they are fixed in location, size, and quality of ore, and they are nonrenewable. Mineral extraction benefits citizens statewide, while at the same time it has implications for environmental quality that can transcend town, county, and regional boundaries. However, there is no clearly defined state policy regarding mining and mineral resources except as expressed through laws such as the Metallic Mining Reclamation Act. The question, thus, is not so much whether the state has a role in helping to reserve mineral-bearing lands but how strong that role should be and what form it should take. Obviously, mineral resources can have a significance which extends beyond local boundaries, but just as obvious is the fact that the application of state policies for managing critical environmental areas to the reservation of mineral lands is very problematical. The key to the state's role in mineral reservation in Wisconsin is perhaps found in the distinction previously drawn between metallic minerals and the aggregates used primarily in the construction industry. In Wisconsin, this distinction corresponds roughly to another distinction: urban versus rural. Wisconsin's metallic mineral development to date has been in the rural parts of the state, while development of nonmetallic minerals, including aggregates used in the construction industry, occurs primarily near the urban areas in which they are needed. This distinction suggests the direction that state policies for reserving mineral lands should take.

As has been mentioned, the major problem in regulating development on lands bearing metallic minerals is that the mineral lands are very difficult to identify.

The specific information needed to regulate development is so expensive and time consuming to collect that only the private sector can undertake the effort; even when the state has this information, the company with a large stake in the potential profits will almost surely have taken steps to protect its investment and future profits through purchase of the land. In addition, because the deposits are probably in rural areas, there will likely have been little or no pressure for development on the land or near it to preclude future mining. These factors point to the conclusion that direct state action is neither necessary nor feasible for the reservation of lands bearing metallic minerals. State action should encourage the use of zoning and other local land-use regulatory powers to manage lands with identified mineral deposits. At least two actions at the State level can encourage local governments to consider regulating land uses on lands containing mineral reserves and lands on which exploration suggests that reserves might be located. Both of the state actions are directed at the data problem identified above.

1) The Minnesota and Michigan departments of natural resources take bids for exploration and mining leases on state-owned lands. As part of these leases, the mining companies agree to furnish the department a yearly report of the exploration work, including drill records, plan maps, and laboratory test data. The information is treated confidentially by the state during the life of the lease unless permission is granted to release the information at an earlier date. A policy in Wisconsin requiring that, at least on state and county lands and ideally on all lands, exploration results be reported to the office of the State Geologist would be a significant step in helping the state identify areas of high potential for mineral development. (Assembly Bill 1368, 1976 Wisconsin Legislature, proposes such a law.)

2) A complementary action would be to significantly increase the activities of the state geological survey in its mineral resource investigations so that both mining companies and state and local governments could take advantage of the information developed. With the basic data obtained from these activities and the exploration data obtained from mining companies, the state would be able to provide comprehensive geologic information for use in the management of resources and the solution of land-use problems. The survey and exploration data could form the basis for encouraging zoning and other land-use regulations in areas in which the possibility of mining is high and which might experience development to preclude mining.

The emphasis at the state level in relation to encouraging the reservation of lands bearing metallic minerals would thus be on providing communities with the information needed to regulate development which might preclude mining. Further emphasis would be placed on providing technical assistance to those communities for planning and regulatory activities. Because metallic mining can be expected to take place in rural areas of the state where planning and zoning do not always exist, the encouragement of these activities through increased educational programs and technical assistance could be an important element of a state program for reserving mineral lands. As discussed in the conclusion to the local controls section of this chapter, the most effective tools for regulating development on mineral lands in rural areas will be traditional zoning, possibly supported by the powers of the soil and water conservation district.

Properly applied, these two mechanisms should provide adequate protection for mineral lands in rural Wisconsin. The mineral reservation districts outlined in the model mineral reservation and mine zoning ordinance would be particularly effective. The innovative local land-use controls examined in the first part

of the chapter are not likely to be effective in rural areas because of administrative complexities, their reliance on an established planning program, and unanswered legal questions.

The reservation in urban areas of the sand and gravel deposits necessary for the construction industry presents different problems than the case of metallics in rural areas, but the state response might be similar. In rural areas, direct state regulations appear unnecessary because of an absence of growth pressures, the ability of the mining industry to protect its known reserves, and the problem of identifying specific mineral deposits; in urban areas, direct state land-use planning and regulation appear unnecessary because these functions probably already exist. Since the mechanisms for reserving sand and gravel deposits already exist, state action would again include providing technical assistance in the form of helping communities identify sand and gravel deposits and encouraging the use of local land-use controls to prevent development from precluding future mineral extraction. In urban areas where planning and land-use regulation are established procedures, both traditional zoning and some of the innovative controls would be applicable to the reservation of mineral deposits. Phased zoning and bonus zoning, which have been used in communities in other states for guiding development, would be the most applicable of the innovative controls for reserving mineral deposits in urban areas. It should be emphasized that even these innovative controls are designed to be used in combination with, not as a replacement for, traditional zoning.

The analysis of state land-use controls and their application to the mineral resource situation in Wisconsin leads to the overall conclusion that direct regulation of development on mineral lands in Wisconsin can best be handled at the local level. The state does have a strong interest in mineral resources, however, and should take action to insure that this interest is well represented in local development decisions affecting mineral resources. To this end, several recommendations for legislative consideration can be made:

1) The state should require that the results of mineral exploration activities be reported to the State Geologist.

2) The Wisconsin Geological and Natural History Survey should increase its program of technical assistance for mineral resource identification in those areas in which conflicts between mining and other types of development are most likely to occur.

3) The state should encourage, but not require, local land-use planning and zoning in those areas identified as having both a high potential for mineral development and a high potential for conflicts between mining and other types of development.

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Chapter IV

FINANCIAL INCENTIVES FOR RESERVATION OF MINERAL LANDS

by

John Strasma* and Ken Erickson+

ABSTRACT

Mineral rights in Wisconsin are real property and thus are subject to taxation under the State Constitution. Five alternative plans for the taxation of mineral rights have been outlined. The plans are: (A) property taxation based on market value, or taxation based on a presumptive value, plus adjustment of other property values; (B) market-enforced self-assessment of unsevered mineral rights; (C) State use of eminent domain to obtain ownership of unregistered severed mineral rights with compensation; (D) differential taxation of mineral-bearing land; and (E) property taxation based on market value, or taxation based on a presumptive value, plus state confiscation of the mineral estate. These plans are not mutually exclusive. A logically conceived combination of several of them would also be considered desirable.

These plans have been formulated with due regard for the practices of other selected states, for Wisconsin constitutional constraints, and for the economic effects of property taxation on mining methods and timing of mining and on mineral exploration. Since state constitutions typically differ significantly (as, for example, do Minnesota's and Wisconsin's), what is legal in Minnesota may not be in Wisconsin. Additional legal research and further State-court decisions based on present and future mineral rights taxation statutes will clarify these issues.

INTRODUCTION

Financial incentives for the purpose of discouraging those uses of lands which tend to preclude the mining of minerals lying beneath and which can be encouraged by government involve primarily considerations of land ownership, especially the mineral right, and of taxes and registration fees on mineral rights. The question is whether or not mineral rights should be taxed, and if so, how. Related questions are whether property-tax pressure is forcing premature development of mineral-bearing lands, especially on the urban fringe, and whether in Wisconsin mineral rights are real property, which is defined as not only land itself but also all buildings and improvements thereon, and all fixtures and rights and privileges appertaining thereto (Wis. Stat. Sec. 70.03 (1973)). If the mineral right is real property, then a rise in property tax could be a deterrent to reservation and eventual development of mineral resources, particularly if these resources are located near the urban fringe.

As the opportunity costs of agricultural, forestry, and recreational land increase (due in part to increasing demand for such land for residential and commercial purposes), land values (market and speculative) will increase, all else equal. To the extent that increased land values are reflected in increased property tax assessments, owners of mineral-bearing land may be forced to

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either (1) commence mining the minerals sooner than is socially or economically desirable or (2) sell the land (or develop it themselves) for a nonmining use (such as a shopping center or housing development) which would preclude any future mineral development of the property.

If undeveloped mineral rights (severed and unsevered) shall be taxed, how might this be accomplished so as to (1) be consistent with the state's principle of uniformity in taxation (Article VII, Wisconsin Constitution) and with due process of law and equal protection and (2) encourage the most appropriate timing and methods of mining and avoid forcing a land use which would preclude future mining?

Currently there are several problems with respect to the taxation of undeveloped mineral rights:

1. Identifying the owner(s) of severed mineral rights;

2. Establishing market values for mineral rights when typically markets in mineral rights do not exist and evaluation of underground minerals is fraught with difficulties;

3. Formulating mineral rights taxation laws which do not violate state constitutional constraints of uniformity of taxation, due process, and equal protection, as do Wis. Stat., Sec. 700.30 and Sec. 893.075 (1973), according to Chicago and Northwestern et al. v. Bayfield County Register of Deeds, et al., decision dated December 18, 1975, by the Hon. Lewis Charles, Bayfield County Circuit Court.

Furthermore, the tax should force the landowner neither to mine prematurely or wastefully nor to sell his land for a nonmining use which would preclude future mining.

Appendix I discusses taxation of operating metallic mines in Wisconsin and how both existing and proposed taxes might affect the reservation of mineral lands.

STATUTES AND POLICIES CONCERNING TAXATION

Introduction

This chapter deals with financial incentives to discourage those uses of lands which tend to preclude the mining of underlying minerals. Non-financial incentives such as zoning have been discussed earlier. Two types of financial incentives have been considered: (1) tax incentivcs, and (2) non-tax incentives.

One type of tax incentive which might be considered is a development tax. This would impose a tax on land which had previously been reserved for future mining but which was to be put to a nonmining use. Currently many states are considering (and some have adopted) such a development tax to preserve green-belts or open space by means of use-value taxation (Barrows, 1974 a,b,c; Barrows and Yanggen, 1974; Barrows and others, 1975). This type of tax incentive implicitly assumes that the highest and best use of the land is for future mineral development. In Wisconsin, as in many other states, this assumption is generally invalid since agricultural, recreational, residential and industrial

uses are typically of higher private and social value. Therefore this type of tax incentive has not been recommended. This chapter does however suggest other types of tax incentives which do not implicitly assume that mining is the highest and best use.

Nontax incentives include transfer payments (subsidies) to operating mines (which is one of the recommendations), subsidies to owners of mineral-bearing land, and subsidized credit. In Wisconsin and in many other states being examined, such land is already being subsidized. This is because local assessors in the state typically assess equally two tracts of land which are equal in every respect except that the surface owner owns the mineral rights on one tract, whereas the other surface owner does not. This occurs despite the fact that Wis. Stat. Sec. 70.32 (1973) requires that the value of subsurface minerals be considered in assessing the land. Other than this exemption, subsidies to owners of mineral-bearing land have been suggested. Subsidized credit would involve extending loans and easy credit to mining companies and other holders of mineral land to cover the carrying costs of holding such land. One of these carrying costs is property taxes paid on the land. The funds to finance such a scheme could come from state general revenues, for example, or from the tax revenues collected from a progressive net proceeds severance tax. Subsidized credit has not been recommended here primarily because the carrying costs of holding mineral lands are not considered high enough to warrant such a scheme.

In summary, the types of financial incentives examined here are taxation of mineral rights as real property and subsidies to marginal metallic mines. The chapter on registration of severed mineral rights has suggested that perhaps leasehold interests, as well as mineral rights, may be considered real property, and that contractual mining agreements may be considered personal property of the prospective miner. As such, these would also be subject to property taxation. This notion is not developed any further in this chapter but certainly merits further research and discussion.

In considering the legal basis (if any) for the taxation of mineral rights, it is helpful to consider the issue of government versus private ownership of mineral lands of Wisconsin in historical perspective, the successes and failures of various taxing techniques employed, the legal and practical problems encountered, and the general philosophy behind the taxing schemes selected.

Government Versus Private Ownership of Mineral Lands

Prior to Wisconsin statehood, the policy pursued with respect to ownership of mineral resources was one of government ownership, with the federal government as landlord. From the time of the sale of the federal lands until about 1910, the development of the mineral lands of the state proceeded under a system of complete private ownership. Beginning about 1910 there was evidence of a desire for partial return to some policy of government ownership--this time with the State of Wisconsin the government involved. Lake (1955, p. 408) suggests that the movement for the reservation of minerals in the remaining State lands was motivated by a desire to conserve and manage minerals in the state rather than to re-examine the merits of private ownership of mineral lands. Concurrently, serious efforts were made to conserve the timber resources remaining in state hands, and the reservation of minerals seemed to be part of a broader attempt to preserve whatever natural resources remained under state control at that time.

Successes and Failures, Legal and Technical Problems, and General Philosophy of Mineral Rights Taxation in Wisconsin

Among the functions of taxes are (1) raising revenue to pay the expenses of government and (2) serving as a regulatory instrument. Regulatory taxes may hinder or abolish undesired activities through heavy tax burdens or encourage desired activities through light taxation.

Throughout most of Wisconsin's history the general ad valorem property tax has been the backbone o the state's tax system. "The most important features in the history of mineral taxation lie in administrative difficulties applying the ad valorem property tax to minerals, and in legislative deviations from this norm" (Lake, 1962, p. 159-162).

Prior to statehood, little attention was paid to the taxation of lead, the only mineral of any importance at that time. But when statehood was achieved, government costs forced the State's lawmakers to search for revenue to operate the State. To meet the revenue demands of the new state, Chapter 15, Revised Statutes of 1849, provided for taxing all real and personal property not exempt from taxation. Section 2 defined real property to include land, buildings and other fixtures and improvements, and "all mines, minerals, quarries, and fossils in and under the same." Thus the state, unlike the territory, expressly declared mines and minerals to be taxable (Lake, 1962, p. 160).

The 1859 law directed the assessor to accept the value which an owner ascribed to his real property (Lake, 1962, p. 161) but the 1868 tax (Wis. Gen. Laws, Sec. 130 (1868)) directed assessors to value the land "from actual view at full value." However, the duty to assess only upon actual view was eliminated altogether.

Throughout the nineteenth century legislative declarations clearly expressed the lawmakers' intent that mineral deposits should be considered in valuing land. The following is an example of typical language (Wis. Gen. Laws, Sec. 130.16 (1868)):

> In determining the value the assessor shall consider, as to each piece, its advantage or disadvantage of location, quality of soil, quality of standing timber, water privileges, mines, minerals, quarries, or other valuable deposits known to be available therein...and their value. (Emphasis added)

The rationale for considering "known" deposits is unclear. It is known neither when the assessor "knew" that land contained mineral deposits nor how convincing the evidence must be. The legislative language arose from the fact that mineral wealth (as opposed to aboveground factors affecting land values) was not visible. Many deposits were unknown, and the existence of known commercial ore bodies provided no basis for valuation beyond the immediate area of exploration.

> In one sense the statutory stress on "known" deposits was superfluous. It directed an assessor to tax the value of ore only if he knew it existed.... How could an assessor tax ore that he did not know was present? The legislature probably covered two ideas.... First...the language made

> certain that lands rich with known deposits of ore were not to be valued as if minerals were absent. Second, the legislature employed language to guard against unwarranted mineral valuations based on flimsy evidence or mere suspicion. (Lake, 1962, p. 162)

The ad valorem taxation of mineral wealth has been impossible to administer. For many years local assessors have struggled to value mineral lands but have lacked the knowledge, facts, and time to do better. Another administrative difficulty which remains unsolved today has arisen from landowners granting leases of minerals and allowing separate ownership, with one person owning the surface and another the subsurface. Applying the ad valorem tax to this system of severed mineral rights created problems which were outlined by Judge Arthur Kopp of Wisconsin's Fifth Circuit.

> Shortly before the turn of the century geologists became interested in the formations in southwestern Wisconsin and contended that under these shallow deposits of lead ore would be found large valuable deposits of lead and zinc. As a consequence, every man who had had any mining on his land considered that his particular farm was one on which there would be an "Eldorado." And so the practice grew by which the grantors when they sold a farm would reserve the "mineral rights" or "the rights to mine for lead and zinc" or some other general language attempting to reserve the grantors the right to, at some future time, enter the premises and mine the same. Up to that time, there was no way under the law of taxing this reserved title to "mineral rights" and so the value of the supposed ore deposits was assessed to the owner of the fee.... About this time mining became very exciting.... As a consequence, if a discovery was made on A's farm the taxing authorities concluded that B's farm adjoining it must also have ore under it and shot up the assessments sometimes tremendously. This of course became very burdensome to the owner of the general fee. He had no way of protecting himself. The mineral rights were conveyed from one to another, and it was an encumbrance upon the farm so that the farmer wanting to sell his farm would have difficulty in getting rid of it. (Lake, 1962, p. 165)

Before 1903 the law collected all taxes, including an amount based on the value of any subsurface minerals, from the owner of the surface estate. As long as the mineral estate was not considered valuable by either the assessor or the general public, the surface owner did not complain. But when the mineral estate became valuable according to popular opinion, the surface owner paid taxes on someone else's property. Furthermore, prospective purchasers objected to the surface owner's inability to convey the mineral estate. (Lake, 1962, p. 166)

Although the 1903 legislature provided that the surface owner might request that the assessor assess the mineral estate separately so that the mineral estate owner owed the tax on his property and that the separate mineral estate might be foreclosed for nonpayment, this law did nothing to clear land titles by revesting the mineral estate in the surface owner. Judge Kopp continues:

> This did not cure the situation. Owners would convey the mineral rights to others and when it came to selling them no one had any way of knowing whether they were worth five cents or five million, and so someone would buy the mineral rights for a nominal amount and still the farmer would have an encumbrance on his title. (Lake, 1962, p. 166)

In 1913 another law provided that if the mineral estate owner's holdings were sold for nonpayment of taxes, only the surface owner or the state might bid at the foreclosure sale. If the state purchased the mineral estate, the law granted the surface owner a three-year period within which to buy the mineral interest. Otherwise the state was prohibited from selling the mineral rights. Judge Kopp notes that the intent of the law was "to give the farmer opportunity to buy in the encumbrance against his property or force the owner thereof to pay taxes on it." (Lake, 1962, p. 166)

> Owners of valuable underground mineral estates would pay taxes assessed upon their holdings. Owners who reserved minerals only because of custom or because of a flimsy hope that the land contained mineral deposits would be unwilling to pay taxes upon estates of highly doubtful value. The intent of the law was that eventually the latter estates would be foreclosed for nonpayment and that the mineral title would be reunited with the surface estate. (Lake, 1962, p. 167)

In 1915 the Wisconsin Supreme Court declared the statute unconstitutional because it violated the equal protection clauses of both the Wisconsin and federal constitutions. That is, the treatment established for foreclosure of mineral estates differed from the tax foreclosure procedures for other kinds of property. When nonmineral property was sold, any person might bid at the sale, but the 1913 law permitted only the state or the surface owner to bid when mineral property was sold for nonpayment of taxes.

> By mid-twentieth century this same problem plagued titles to many acres in northern Wisconsin. Many sellers, often long prior to 1950, had sold large quantities of land, reserving mineral estates. By 1950 owners of these reserved mineral estates were often the heirs of the original vendor. Many times the heirs were numerous and even unknown. Frequently public authorities foreclosed tax liens upon the land and then discovered a lack of bidder interest at the tax sale because uncertainty existed about whether the title obtained at the sale included the mineral estate. Often the land's value rested almost entirely upon the hope that minerals were present. The uncertainty surrounding the issue cooled bidding at tax sales and decreased public revenues. Furthermore, the ownership of the reserved mineral estate was fractionalized among many widespread heirs of the person who had originally reserved the minerals. This made it almost impossible for any large mining company to acquire good title to the mineral estate. Consequently, development of the mineral potential of the area lagged. (Lake, 1962, p. 167)

In 1953 a bill was proposed to clear away the uncertainty (Wis. S.B. 343.5 (1955 Sess.)) by providing that the "estate vested in the grantee of any tax deed...shall include all minerals and other valuable deposits in such land, and the right to enter and remove such minerals and deposits, to the exclusion of any person who may have formerly owned any such rights." However, this bill was not approved by the Assembly.

Up to 1927, the Wisconsin Constitution provided that "the rule of taxation shall be uniform"; but despite this command, attempts were made prior to 1927 to provide a different taxation method for mineral lands.

A 1927 amendment to the state constitution permitted the legislature to provide different taxes for forests and mineral lands. The amendment added the following words which are underscored: "The rule of taxation shall be uniform, and taxes shall be levied upon such property with such classification as to forests and minerals, including or separate or severed from the land, as the legislature shall prescribe."

Following this amendment many bills proposed special tax rules for mining properties and businesses. Three proposals enacted after 1927 provide examples of the use of taxing power as a regulatory device: (1) a 1947 special graduated percentage depletion allowance that was afforded persons or associations owning "lead and zinc mines, or mills finishing the products of lead and zinc mines or the smelters"; (2) a 1953 gross proceeds severance tax on low-grade iron ore extraction in lieu of the ordinary real and personal property tax on low-grade iron ore properties (the purpose of the statute was to encourage the building and operation of low-grade iron ore plants); and (3) a 1973 gross proceeds severance tax on copper mines in lieu of a property tax on the value of the surface plus improvements (Wis. Stat., Sec. 70.87 (1973)).

As discussed in the previous chapter, present statutes in Wisconsin require registration of severed mineral interests plus the payment of a $0.15 per acre registration fee (with a $2 minimum) with reversion to the surface fee owner if the interest is not registered and the fee paid. However, these were declared unconstitutional by the Hon. Lewis Charles in Bayfield County Circuit Court in December, 1975. Furthermore, undeveloped metallic and nonmetallic mineral rights are typically not put on the local property tax rolls, although Wis. Stat., Sec. 70.32 (1973) appears to require that mineral deposits which are potential mines or quarries are a factor which must be considered by the local assessors in evaluating mineral-bearing lands.

> 70.32 Real estate, how valued. (1) Real property shall be valued by the assessor in the manner specified in the Wisconsin property assessment manual provided under Sec. 73.03 (2a) from actual view or from the best information that the assessor can practicably obtain, at the full value which could ordinarily be obtained therefor at private sale. In determining the value the assessor shall consider as to each piece, its advantage or disadvantage of location, quality of soil, quantity of standing timber, water privileges, mines, minerals, quarries, or other valuable deposits known to be available therein, and their value; but the fact that the extent and value of minerals or other valuable deposits in any parcel of land are unascertained shall not preclude the

assessor from affixing to such parcel the value which could ordinarily be obtained therefor at private sale. If on the assessment date occurring in 1957 or in any year thereafter any person other than a governmental unit of Wisconsin owns real estate in which a Wisconsin governmental unit has retained mineral rights, timber rights or an easement or any similar interest in such real estate, the value of any such retained right shall be eliminated in determining the assessable value of such property, and such retained interest shall be excepted in the assessment description of such land and in any notice, tax certificate or tax deed following from any such assessment.

Extent of Property-Tax Pressure on Mineral-Bearing Lands

Property-Tax Pressure From Taxation of the Subsurface

It is evident that there is very little, if any, property tax pressure encouraging or forcing premature development of mineral-bearing lands, either for mining or for other uses, resulting from taxes paid on the mineral value of the land. In neither the case where mineral rights belong to the surface owner nor where they are severed do the local assessors include mineral value in the property tax base. The reasons are partly that the values of these rights are seldom known with much certainty and that even if a reasonable value could be assigned and an owner or owners identified, local assessors do not appear to be taxing these rights, as Wis. Stat. Sec. 70.32 (1973) appears to require that they do. Although there is currently no property tax pressure on mineral-bearing land, there could be if high property taxes were imposed.

Property-Tax Pressure From Taxation of the Surface

However, there is evidence of property tax pressure encouraging premature development of farmland and undeveloped land (some of which is mineral bearing) resulting from assessment of the surface. As urban areas grow, farm property taxes increase because of higher assessments and tax rates. Assessments rise because sales of farmland for residential and commercial use increase the market value of the remaining farmland. As assessments increase, tax rates may rise and new schools, roads, and other public services are required as well. Although farm property taxes increase, farm incomes increase at a much slower rate, causing a "tax squeeze" on the farmer.

Furthermore, speculative buying of land (some of which may be mineral bearing) will bid up the price of farmland, forestland, and recreational and undeveloped land. When any of these lands come under this tax pressure, the owners often sell their land for some developed use. This developed use (a shopping center, a housing development) would preclude any subsequent mining of subsurface minerals.

Summary

In conclusion, on the basis of the discussion in Chapter II, mineral rights are considered real property subject to taxation. Also, there is little tax pressure resulting from property taxation of subsurface minerals forcing premature mining or nonmining development.

The next section examines present statutes and judicial decisions of fifteen states including Wisconsin regarding the taxation of undeveloped mineral rights. Alternative ways to tax these property rights consistent with constitutional constraints are outlined.

TAXATION OF UNDEVELOPED MINERAL RIGHTS

Wisconsin constitutional constraints on the taxation of mineral rights will first be reviewed. Following this, the economic effects of property taxation on mining methods and timing of mining and on mineral exploration will be outlined. Finally, suggestions for taxing mineral rights in Wisconsin will be given, with due regard for both the practices of other states and for Wisconsin constitutional law.

Wisconsin Mineral Rights Taxation

The Bayfield County Circuit Court decision of December 18, 1975, in Chicago and Northwestern Transportation Company and Chicago, Milwaukee, St. Paul and Pacific R.R. Company v. Earl H. Petersen, Register of Deeds for Bayfield County, and Victor A. Miller, Attorney General of Wisconsin, has helped to define legal bounds for Wisconsin mineral rights taxation. The court has affirmed that severance creates two separate estates consisting of the surface rights and the subsurface mineral rights. The court quoted 58 CJS Sec. 328 (1975):

> After the mineral is conveyed apart from the land, or vice versa, two separate estates exist, each of which is distinct from the other, and both of which are mutually dominant and servient. The owner of the surface and the owner of the minerals are neither joint tenants nor tenants in common, but the surface and the mineral rights are held by separate and distinct titles in severalty, and each is a freehold estate of inheritance separate from and independent of the other. (Judge Lewis Charles, December 18, 1975, p. 3)

It concluded that although none of the numerous citations to this proposition of law are from the Wisconsin Supreme Court, the citations are nonetheless persuasive.

In reviewing the history of Wisconsin's attempt to tax mineral rights, the court cited an Attorney General's opinion of October 25, 1965 (54 WIS. OPS. ATT'Y. GEN. 144 (1965)) advising the state senate that its proposed Bill 334-5 was unconstitutional. The bill provided that owners of severed mineral rights must record with the Register of Deeds a "reaffirmation" of such rights and pay a flat rate filing fee thereafter. Failure to record such a statement prior to 1967 would result in extinguishment of such rights. If the tax was not paid, the mineral rights were required to be sold, as in the case of other real property. The Attorney General's opinion concluded that the flat rate filing fee would violate Article VIII, Section 1 of the Wisconsin Constitution requiring uniformity in taxation. (Judge Lewis Charles, December 18, 1975, p. 5-6)

On January 8, 1974, the State Senate was given an Attorney General's opinion (63 WIS. OPS. ATT'Y. GEN. 3 (1974)) effectively declaring Senate Bill 36 unconstitutional. The bill required an annual ten cent per acre tax on "commercially feasible iron ore reserve deposits in this state," unless the owner had mined at least fifty thousand tons of crude ore during the previous

year. Failure to pay or late payment would result in a penalty and interest, and if the tax remained unpaid for three years the mineral rights automatically reverted to the surface owner. The writer of this opinion concluded that the "tax of ten cents an acre..." was a property tax, violating Article VIII, Section 1 of the Wisconsin Constitution, requiring uniformity of taxation. (Judge Lewis Charles, December 18, 1975, p. 6)

With regard to Chicago Northwestern et al. v. Peterson and Miller, Bayfield County Circuit Court, December 18, 1975, Judge Charles stated that three things were lacking:

1. Due process of law--The mineral registration act stated that if severed mineral rights were not recorded and fees paid, then these rights would revert to the owner of the surface rights, with no provision for any appeal.

2. Equal protection--The amount of the registration fee did not vary proportionately to the value of the rights being protected. Therefore, two people owning mineral rights of equal value could possibly have to pay unequal amounts of taxes to protect their continued ownership of several minerals.

3. Uniformity of taxation--The tax imposed by Ch. 260 results in an improper classification and is nonuniform because it applies only to owners of severed mineral rights, violating Article VIII, Section 1 of the Wisconsin Constitution.

This decision leaves the state still groping to find constitutionally viable means of taxing mineral rights.

In conclusion, several problems exist in Wisconsin because mineral rights are not being taxed:

1. Taxing mineral rights is inequitable to other owners of real property. None of the assessors interviewed by Pinkovitz (1975) consider mineral ownership in their assessments. This is inequitable, since clearly mineral rights have some value apart from the surface estate, and Sec. 70.32(1) of the Wisconsin Statutes requires that mineral rights be assessed. In Pinkovitz's study, several assessors were asked to consider the hypothetical situation of two contiguous parcels of equal value identical except for the fact that the mineral rights to one have been severed while the surface estate of the other is intact. The unanimous reply was that under present practice the two parcels would be valued equally for property tax purposes.

2. There is an inefficient and inequitable loss of property tax revenue to state and local governments. Since mineral rights are not presently being taxed, the state and local governments are losing a source of revenue. The state and local tax base is eroded, and therefore other kinds of real property are taxed at higher rates than would be the case if mineral rights were also included in the tax base.

There is an implicit assumption that putting severed mineral rights on the tax rolls will increase the local tax base. However surface owners who do not own their subsurface mineral rights would likely claim that their assessment should be lowered by the amount of the severed mineral rights tax since presumably the surface and subsurface values are already included in the land assessment. In this case the tax base would remain unchanged. But if an "arm's length" market value for the subsurface is later obtained, then the value of the surface plus subsurface may increase, adding to the local property tax base. Even if it can be assumed that adding severed mineral rights to local tax rolls will increase the tax base, the local tax revenues will hardly be affected, due to the state shared-tax formulae.

Mineral Rights Taxation in Fifteen Selected States (including Wisconsin)

This section summarized by means of a tabulation the present policies of fifteen selected states regarding the taxation of undeveloped severed and unsevered mineral interests in land and then highlights specific features of interest from these states.

These states were selected because they either gained statehood under the Northwest Ordinance (thus mineral rights passed from the federal government to state governments under similar laws, and later many of these rights became severed from the surface estate in a like fashion) or because they are states with significant metallic mining industries.

Letters were sent to people in state government, private law practice, and universities in Alaska, Arizona, California, Colorado, Idaho, Illinois, Michigan, Minnesota, Montana, Nevada, New Mexico, North Dakota, Utah, Wisconsin, and Wyoming. The following questions were posed:

1. Is there a state or local property tax on undeveloped mineral rights in your state?

2. Who assesses these mineral rights?

3. What is the basis for taxation?

4. Are there any special provisions regarding the taxation of severed mineral rights?

5. Are there any special statutory tax incentives afforded holders of mineral rights such as exemption from taxation, differential property taxation at lower rates than other classes of real property, etc?

Results of the Survey

The results of this survey are summarized in Table IV-1. In eleven states, namely Arizona, California, Colorado, Idaho, Illinois, Michigan, Minnesota, Nevada, New Mexico, Utah, and Wisconsin, there is a state or local property tax on at least some types of undeveloped mineral rights (in theory, at least). However, neither North Dakota's nor Wisconsin's is assessed in practice. In four of the eleven states mineral rights are state assessed, while in the remaining eight states these mineral rights are assessed by the local assessor. In Colorado, as a result of recent meetings of the Committee on Mineral Taxation, the Interim Committee on Property Tax Assessment Practice and School Finance has recommended that the Property Tax Administrator (a state officer) rather than

Table IV-1. Property taxation of undeveloped mineral rights in fifteen selected states (including Wisconsin)

State	Is There a Property Tax on Undeveloped Mineral Rights?	Who Assesses These Mineral Rights?	Basis for Taxation	Special Provisions Regarding the Taxation of Severed Mineral Rights	Special Statuary Tax Incentives (Disincentives)
Alaska	None on metallics or nonmetallics.				Since mineral rights are not taxed, such property is subsidized relative to other real property.
Arizona	Yes. (See Arizona Revised Stats. Ann., Sec. 42-271 (1956) and Arizona Constit., Art. 9, Sec. 1). However Arizona does not tax nonproducing unpatented mining claims for their mineral value, although they may be taxed if the surface is used for nonmineral purposes.	The assessed valuation is reviewed by the State Board of Property Tax Appeals. The State Tax Commission sets the tax rate, and taxes are levied and collected in each county.	Patented nonproducing mines and mining claims and buildings and improvements on either patented or unpatented claims not being operated are taxed at 18% of market value, or at 25% of market value if used for commercial purposes or rented for residential use	None. Deeds conveying or reserving severed mineral county recorder's office in the county in which the property is situated, in the same way and in the same records as any other deed conveying real property. The only difference is that a conveyance of a severed mineral estate or any other mineral property (such as patented and unpatented mining claims) would usually be indexed in the Deeds of Mines Index as opposed to the Deeds of Real Estate Index.	Differential taxation provides tax incentives for some classes of land relative to others. For example, Class 3 land is taxed at 25% of market value, while Class 4 land is taxed at only 18%.
California	Yes. Real property subject to taxation includes all mines, minerals, and quarries in the land (See Calif. Stats., Sec. 104).	The county assessor.	Fair market value times the local mill rate.	The State Board of Equalization recommends that unless there is good evidence to the contrary, severed undeveloped mineral rights be assessed of zero value.	None.
Colorado	Yes. (See Colo. Revised Stats., 197339-10104(4))	The county assessor.	30% of market value times the local mill rate.	All severed mineral rights are taxed at 30% of market value. If no market exists, or the value of the mineral rights is unknown, then they are assessed at $1 per acre for each category of severed minerals, with a $50 minimum. For metals, severed mineral interests were assessed at an average of $1.11 per acre in 1975; for nonmetals, $1.13 per acre.	None.

Table IV-1.--Continued

State	Is There a Property Tax on Undeveloped Mineral Rights?	Who Assesses These Mineral Rights?	Basis for Taxation	Special Provisions Regarding The Taxation of Severed Mineral Rights	Special Statuary Tax Incentives (Disincentives)
Idaho	Yes, except, et. al., possessary rights to public lands (Idaho Stats., Sec. 63-105G), and nonpatented mining claims (Sec. 63-105H).	Patented mining claims are assessed by the county assessor.	Mines and mining claims, after purchase from the U.S., are taxed at the price paid to the U.S. Otherwise, patented mineral rights are assessed at whatever value he has valued other like land. Usually this type of land is assessed at not less than $5 per acre and no additional value is added for recreation use, summer home, or other. The county tax is collected by applying a levy to the assessed valuation. There is no state tax collected from the assessment of mining land.	All mineral rights reserved to any grantor, except the U.S. or the State of Idaho, by conveyance of any lands other than lands acquired under the mining laws of the U.S., shall be assessed at not less than $5 per acre (Sec. 63-2801).	None.
Illinois	Yes. There is a local property tax on mineral rights, but no state tax.	The local assessor.	Taxes are computed by multiphying the local tax rate by each one hundred dollars of assessed value. Assessed value is represented as a percentage of market value.	Mineral rights held by several owners are assessed and taxed in accordance to the portion owned.	None.
Michigan	Yes. All estates in land, including mining interests separately owned, must be assessed together (Mich. Stats., Secs. 211.1, 211.2, 211.27).	The State Geologist.	The "true case value" of mineral rights times the local mill rate (Act. No. 66, Public Acts of 1963).	Under Mich. Stats., Sec. 211.6a and 211.6b, mineral rights consisting of metallic resources not developed or not in production or which have not been explored shall be assessed separately from the surface rights in the property, if such mineral rights and surface rights are owned by separate owners, with exceptions. The state assigns a presumptive value of $5 per acre to these severed mineral rights.	To encourage exploration and development of metallic mineral resources, metallic mineral ore newly discovered or proven in the ground and not part of the property of an operating mine shall be exempt from the general property tax for a maximum of 10 years, or until it becomes part of the property of an operating mine. This provides a tax subsidy to owners of undeveloped mineral rights relative to owners of other real property.

Table IV-1.--Continued

State	Is There a Property Tax on Undeveloped Mineral Rights?	Who Assesses These Mineral Rights?	Basis for Taxation	Special Provisions Regarding the Taxation of Severed Mineral Rights	Special Statuary Tax Incentives (Disincentives)
Minnesota	Yes. (See Minn. Stats., Secs. 272, 273, and 298).	Taxable minerals and unmined ore are state assessed.	Unmined iron ore, except low recovery ore, is designated as Class 1a real property, assessed of 50% of its market value, and taxed at the prevailing mill rate (Minn. Stat., Sec. 273.13, 1974). Low recovery iron ores fall within Class 1a, but are valued at from 30% to 48½% of market value (Minn. State. Sec. 273.15-.16, 1974). Unmined taconites and iron sulphides are to be assessed and taxed on the basis of value; however, the tax may not exceed $1 per acre. (Minn. Stats., Sec. 298.26, 1974).	Chapter 650, Laws of 1973, Art. XX, amended Minnesota's 1969 mineral registration act (Minn. Stats. Sec. 93.52.58) by providing that anyone failing to file within the statutory period would forfeit his severed mineral interests to the state (Minn. Stats., Sec. 93.55 (1974)). All severed mineral interests, to the extent they can be valued, are susceptible to ad valorem taxation under Minn. Stats., Sec. 272.04, 1974, in the same manner as other interests in land. Severed mineral interests not otherwise taxed are subject to a tax of 25¢ per acre per year, or $2 per interest per year, whichever is greater (Minn. Stats., Sec. 273.13, Subd. 2a (1974)). The constitutionality of this amendment is uncertain and awaits the Second Judicial District Court's decision (cite Contos v. Herbst).	None.
Montana	No.			None.	Since mineral rights are not taxed, such property is subsidized relative to other real property.
Nevada	Yes, but one exception is unpatented mines and mining claims except possessory claims	The county assessor. Assessment is equalized by the county board of equalization and the State Board of Equalization, on appeal.	35% of full cash value times the local mill rate. The county assessor is required to assess each patented mine in his county at not less than $500 (Sec. 362.030).	None.	None.

Table IV-1.--Continued.

State	Is There a Property Tax on Undeveloped Mineral Rights?	Who Assesses These Mineral Rights?	Basis for Taxation	Special Provisions Regarding the Taxation of Severed Mineral Rights	Special Statuary Tax Incentives (Disincentives)
New Mexico	Yes, but see Ch. 165, Laws of 1975, Sec. 72-29. Only patented class one nonproductive mineral property "known to contain minerals in commercially workable quantities of such a character as add present value to the land in addition to its value in other purposes" are taxed. (Sec. 72-29-11, NMSA 1953, 1975 Supp.)	The New Mexico Property Tax Department, or the appropriate county assessor.	The value of class one nonproductive mineral property (nonoperated, privately owned mineral lands, reserves, interest & several mineral products when the property is known to contain commercially workable quantities of minerals) is determined by applying a per acre value to the surface acres of the property (Sec. 72-29-11, NMSA, 1953, 1975 Supp.).	Class one patented severed mineral interests are taxed by applying a per acre value to the surface acres of the property. Severed mineral interests owned by the U.S., the state, or other gov't entities are not required to be assessed.	None.
North Dakota	No, in practice. The intent of Secs. 57-02-24 and 57-02-25, North Dakota Revised Code of 1943, is that mineral rights be taxed. However, because of the valuation problem, the fractionalization of ownership of severed mineral rights, the inequities that would be caused if only non-severed mineral rights were taxed, and conflicting North Dakota Supreme Court decisions, local assessors do not administer these statutes.	In theory, the local assessor.	The local mill rate is to be applied to market value.	Sections 57-02-24 and 57-02-25 of the North Dakota Century Code require the separate listing and assessment of coal and other severed mineral interests. However, severed mineral rights are rarely, if ever, assessed for real estate tax purposes. During the last legislative session, several bills concerning the taxation of severed mineral rights were introduced, but none passed. There is no requirement that severed mineral interests be registered, but typically such interests are registered to protect title.	Since, in practice, mineral rights are not taxed, such property is subsidized relative to other real

Table IV-1.--Concluded.

State	Is There a Property Tax on Undeveloped Mineral Rights?	Who Assesses These Mineral Rights?	Basis for Taxation	Special Provisions Regarding the Taxation of Severed Mineral Rights	Special Statuary Tax Incentives (Disincentives)
Utah	Yes. (See Utah Stats., Sec. 59-5-57.)	The local assessor.	Mineral rights are assessed at $5 per acre on all patented land, but no tax is presently imposed on land leased from the state or federal government.	None, since both severed and unsevered mineral rights are assessed at $5 per acre on all patented land, except land leased from the federal or state government.	None.
Wisconsin	No, in practice, although Ch. 70.32, Wis. Stats. appears to require that mineral deposits which are potential mines or quarries be taxed.	The local assessor.	Market value times the local mill rate.	Sec. 700.30, Wis. Stats., "Mineral Rights," and Sec. 893.075, Wis. Stats., "Adverse Possession of Mineral Rights Defined," providing for recording of severed mineral rights with the Register of Deeds, the payment of an annual registration fee of 15¢ per acre (with a $2 minimum) with reversion to the surface fee owner if the interest is not registered and the fee paid, was declared unconstitutional by the Bayfield County Circuit Court in December, 1975.	Since mineral rights are not taxed in practice, such property is subsidized relative to other real property.
Wyoming	No, mineral interest in lands is subject to assessment only when and as minerals are produced.			None.	Since mineral interests are not taxed until production begins, such property is subsidized relative to other real property.

the county assessor.[1]

Some states taxing mineral rights choose full market value as the basis for taxation, while others either assess them at less than 100 percent of full market value or use a base other than market value. (For example, New Mexico assesses class one undeveloped mineral rights by applying a per acre value to the surface acres of the property.) Of the nine states which, in practice, tax mineral rights, eight (California, Colorado, Idaho, Illinois, Michigan, Minnesota, New Mexico, and Utah) tax at least some types of severed mineral rights. If no market value can be found for these mineral rights, then all except California and Illinois assign a presumptive value to severed mineral rights of from $0.25 per acre (Minnesota) to $5 per acre (Idaho, Michigan, Utah) and in some cases a minimum presumptive value (Colorado has a $50 minimum, Minnesota a $2 minimum). If no market value can be found for severed mineral rights in California, then the State Board of Equalization recommends that they be assessed at zero value. "The assessment complies with the law to assess all privately owned property subject to taxation, and the zero assessment saves the time and expense of sending out a tax bill, since no bill is rendered."[2]

Those five states which do not in practice tax undeveloped mineral rights (Alaska, Montana, North Dakota, Wisconsin, Wyoming) are implicitly subsidizing mineral property relative to other classes of real property. Arizona provides for differential taxation for some classes of mineral land relative to others. To encourage exploration and development of metallic mineral resources, Michigan statutes provide that newly discovered metallic mineral ore proven in the ground and not part of the property of an operating mine shall be exempt from the general property tax for a maximum of ten years or until it becomes part of the property of an operating mine. This provides a tax subsidy to owners of undeveloped mineral rights relative to owners of other real property (see Appendix II). Although the question of whether these states tax leasehold interests was not fully explored, it was learned that Colorado taxes leasehold interests.[3]

Review of Contos v. Herbst, A Minnesota Case of Special Relevance to Wisconsin Mineral Taxation

A review of Defendants' Memorandum of Law, File No. 400979, from the case of Contos v. Herbst, District Court, Second Judicial District, Ramsey County, Minnesota (decision forthcoming) may be helpful for understanding some of the legal issues and constraints in Wisconsin and may be helpful in fashioning a tax policy for mineral rights. The case questions the constitutionality of Minn. Laws Ch. 650 Art. XX (1973). That act amended Minnesota's 1969 mineral registration act (Minn. Laws Ch. 829 (1969), coded as Minn. Stat. sec. 93.52-58), which had required all persons claiming ownership of severed minerals to file a statement describing their interest with the register of deeds or registrar of titles. The purpose of the

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[1] Report to the Colorado General Assembly: Recommendations for 1976 Committee on Mineral Taxation, Colorado Legislative Council, Research Publication No. 214, November 1975, p. 5.

[2] Robert H. Paschall, Senior Petroleum and Mining Engineer, Assessment Standards Division, State Board of Equalization, Sacremento, California, letter to K.W. Erickson, March 11, 1976.

[3] Colorado Legislative Council, November 1975, p. 9.

requirement is

> ...to identify and clarify the obscure and divided ownership condition of severed mineral interests in this state. Because the ownership of many severed mineral interests is becoming more obscure and further fractionalized with the passage of time, the development of mineral interests in this state is often impaired. Therefore, it is in the public interest and serves the public purpose to identify and clarify these interests. (Minn. Stat. sec. 92.52(1) (1974)).

The basis for plaintiffs' action is two 1973 amendments to the 1969 mineral registration act. First, to insure that severed mineral rights would be registered, the legislature provided that anyone failing to file within the statutory period would forfeit his severed mineral rights to the state (Minn. Stat. sec. 93.55 (1974)). Second, and important for the question of Wisconsin taxation of mineral rights (severed and unsevered), was the provision that severed mineral interests not otherwise taxed be taxed at $0.25 per acre per year or $2 per interest per year, whichever is greater (Minn. Laws Ch. 650 Art. XX sec. 6 (1973), coded as Minn. Stat. sec. 99.55 (1974)). (See Appendix III for the considerations which compelled the legislature to impose this particular tax on this class of property.)

In summary, defendants' arguments are as follows:

1. The taxation of severed mineral interests as a separate class of property is based upon reasonable, constitutionally permissible distinctions. (A Wisconsin tax on severed mineral rights would also have to meet this test of "reasonableness.") The legislature has broad power to classify property for tax purposes as long as the requirement has a rational basis. The reasonable basis for the separate classification of severed mineral interests is that taxation of such interests has proven to be impractical, infeasible, and a failure. Although State law since 1905 has permitted severed mineral rights to be taxed separately from surface rights and interests in real estate, the ability to assess only a minute fraction of severed mineral interests has created

> (a) class of property...which, although not exempt from taxation, is not assessed for tax purposes and does not, therefore, contribute anything toward the cost of supporting the governments which protect and preserve the continued existence of the property (Minn. Stat. sec. 272.039 (1974)).

"Having determined that this situation was intolerably unfair, the legislature decided that if severed mineral interests were to bear any significant share of the property tax burden, such interests would have to be taxed as a separate class and in a different manner than other interests in land."[1]

2. The taxation of all severed mineral interests which are not otherwise taxed at $0.25 per acre is permitted both by the uniformity clause of the state constitution and the equal protection and due process provisions of the state and federal constitutions.

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[1] Contos v. Herbst, Ramsey County, Minnesota, p. 13.

Since 1906, the uniformity clause of the Minnesota state constitution has embodied essentially the same standard as the equal protection provisions of other state and federal constitutions. The single principle expressed by each of these provisions is only that those similarly situated should be treated alike. "Uniformity of taxation" consists of "the right to equal treatment in the apportionment of the tax burden."[1]

The severed mineral interest tax fulfills the purpose of the uniformity requirement and provides as much uniformity as reasonably can be expected under the circumstances. Neither state nor federal constitutions require absolute, unvarying uniformity of taxation within a class, including a mathematically precise gradation of tax according to value. Also, even though the tax is identical for all otherwise untaxed severed mineral interests regardless of their value, this fact alone under the correct rule of law does not render the tax unconstitutional. The degree of uniformity required depends on the particular facts of each situation. Certainly a considerable departure from absolute uniformity is permissible where the choice is simply between taxing the property in the manner in question or not being able to tax it at all. Furthermore, the tax is uniformly nominal, the amount per acre or per interest being so small as to constitute no substantial burden to the owner of any severed mineral interest. The purpose of the Minnesota uniformity clause is to apportion the burden as justly as is practically possible. This purpose is achieved by imposing a single, low flat rate tax that burdens no one's interest to any substantial extent, i.e., a tax that is uniformly unburdensome.

> This is no more violative of uniformity than are substantially higher taxes carefully apportioned by ability to pay, value of property or some other standard.... The propriety of placing a nominal assessed value on severed minerals has been upheld, and in fact judicially mandated, in cases where the actual mineral values could not be determined.[2]

This nominal tax is not imposed on every severed mineral interest regardless of value, but only on those interests that are not "valued and taxed under other laws relating to the taxation of minerals, gas, oil, or similar interests."[3] The $1.25 per acre tax is therefore an alternative to the general system of mineral taxation, which applies only when that system fails to tax a severed mineral interest because the value of the interest cannot be adequately determined or no minerals are being extracted from it.

> The need for this alternative is illustrated by the ludicrously small proportion of plaintiffs' severed mineral interests that have been subjected to ad valorem taxation in the past: out of a combined ownership of 1,261,424 acres of severed mineral interests, plaintiffs paid ad valorem taxes on only 3,212 acres, or slightly more than 0.2%, in 1974.... The $.25 per acre tax merely assures that severed mineral interests will at least pay some tax. In effect the legislature has directed that severed mineral interests are to be taxed in relation to value or production where possible but that under no circumstances shall any such interest pay a tax less than $2.00. The tax, then, operates as a minimum, or a "floor" for severed mineral taxation generally.[4]

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[1] Contos v. Herbst, Ramsey County, Minnesota, p. 17.
[2] Contos v. Herbst, Ramsey County, Minnesota, p. 27.
[3] Contos v. Herbst, Ramsey County, Minnesota, p. 29.
[4] Contos v. Herbst, Ramsey County, Minnesota, p. 30.

(See Appendix III for further details from Defendants' Memorandum of Law.)

Also, the tax satisfied the due process clauses of the state and federal constitutions, since the obvious purpose of the severed mineral interest tax is to raise revenue, not to confiscate plaintiffs' property.

Property Taxation

Many economists believe property taxes tend to encourage depletion of mineral deposits rather than their conservation. First, wasteful mining practices may result from the owner's ignorance of the nature, location, and extent of the entire ore body. However, if such wasteful mining techniques have occurred in Wisconsin, there is no public record of them. Second, since the property tax is an annual levy based on the mineral value of the land, it tends to induce lessees and owners to "mine from under the tax"--to commence mining earlier than otherwise, to extract ores more quickly once mining begins, and to take high-grade ores and ores most easily mined first. Insofar as mining from under the tax discourages securing all the commercial-grade ore in the ground, conservation of natural resources suffers.

Some have suggested that property taxation of undeveloped mineral rights (for example, those being held by large mining companies under long-term, 99-year mining leases) may act as a financial incentive to mineral development. For example, if mineral resources are controlled by firms with monopoly power which retard current output rates in order to enhance price, then it is possible that a substantial property tax on mineral deposits in place will cause the monopolist to increase current output rates, with a consequent lowering of prices (Steele, 1967, p. 245). Steele believes that this effect is likely to be minor, however, unless the tax rate is quite high, demand is relatively elastic, the marginal costs of increasing the production rate quite low, and the interest rate relatively low. If the quantity of resources to be recovered is fixed, a monopolist who is induced to produce more at lower prices in earlier years will logically produce the smaller remaining outputs in later years at higher prices. Steele (1967, p. 245) feels that the regulation of monopolistic practices as such would probably be a more efficient way of dealing with this problem.

> But it must be noted that property taxes may be rather more effective in inducing utilization of properties which would otherwise be kept entirely idle for speculative purposes. However, the motivation for such speculation may be greater with regard to the ground-cent value of urban and suburban land than in the case of mineral lands.

Presently there is an increasing amoung of mineral leasing activity in Wisconsin, since companies are willing to pay substantial rents, royalties, and bonuses to passive landowners to obtain prospecting leases, some of these lands have a probability of containing economically exploitable deposits. Some economists feel that ad valorem property taxation may retard exploration to ascertain the extent of a given deposit. Since an ad valorem tax is an annual levy upon the value of known underground minerals, owners and lessees hesitate to further examine the extent of their holdings. However, Gaffney (1967, p. 373) notes that prediscovery property taxes encourage landowners to lease mineral rights they may own or to prospect themselves. This will either (1) dispel the illusion that their mineral rights are valuable, thus lowering their assessment, or (2) confirm it and lead to their taxation and also exploitation.

CONCLUSIONS AND RECOMMENDATIONS

The following options for taxing mineral rights are intended to secure tax revenues for the state, efficiently and equitably, consistent with constitutional constraints and with current thinking on the economic effects of mineral property taxation on methods and timing of mining, and on mineral explorations.

Option A. Property Taxation Based on Market Value, or Taxation Based on a Presumptive Value, Plus Adjustment of Other Property Values.

The local assessor would have authority to request information, either as part of the registration process or separately and periodically, of owners, lessees, or lessors about what they know about mineral values. If the answer is "nothing"--and measured by acreage it would be "nothing" for much of the State, until more is known about Wisconsin's mineral resources--some minimum fee, or presumptive value, could be assessed at say $10 per acre. This is done in a number of states. The particular level for the presumptive value might be found by reference to actual sales and actual transfers of mineral rights from one party to another.

To continue to treat mineral rights as if they have zero value is clearly incorrect. Mineral rights do change hands, and often sellers of surface lands reserve the mineral rights for themselves unless they are paid an extra price for them. Thus the problem is to define a practical minimum which the courts would regard as equitable. Presumably, the legislature could decide on an appropriate value, for legislators would be quite capable of determining property values for their districts, or the determination of an equitable value might be left to the local assessors.

If the assessors have been valuing only the surface property and not the underlying minerals (if any), and have been treating one farm just like another without taking into account the presence or reservation of mineral rights, then they would make an adjustment between otherwise like farms so that those without mineral rights would be assessed at less than those with rights by the amount of which the rights were assessed, thus meeting the constitutional uniformity of taxation provision under Article VIII, Section 1, of the Wisconsin Constitution. It is the present procedure which violates equity, exempting mineral rights and thus over-taxing surface owners.

Since this would be a departure from current procedures in most counties, the State might assist assessors in the transition, both to aid mining development and to promote an orderly and equitable placing of mineral rights on the tax rolls, by these means:

1. Educating the public--conducting local informational sessions explaining what is going on, and why, and pointing out that this may mean benefits for the owners of farms who do not own the subsurface mineral rights, as well as taxes for those who have owned their subsurface minerals and have not paid taxes on them all these years. For mining companies, this would greatly facilitate the locating and securing of the mineral rights they need. The owners of mineral rights, once properly registered, would also benefit by receiving more offers from exploration companies.

2. Working with the assessors--there would be technical problems of setting registrees, and so forth, in which the Department of Revenue has some expertise. Also, professional assessors may be required to help local assessors get set up to do the job by assisting in developing assessment procedures, helping train existing and new personnel, and so forth.

One may question the use of taxation as a means of expediting mineral rights registration. One argument is that if a tax is levied on severed mineral rights, then if the severed mineral rights are not registered, these rights would revert to the county through tax delinquency proceedings. Therefore, to prevent this loss of property rights, mineral-rights owners would be inclined to register their interests. It is thus argued that without such a tax delinquency mechanism, little registration would take place. However, escheat or other methods suggested in Chapter II could be used to establish title to severed mineral interests if a tax or mineral registration fee is not levied.

Option B. Market-Enforced Self-Assessment of Unsevered Mineral Rights.

This has previously been mentioned in regard to the registration scheme whereby registration would be a quid pro quo for mineral zoning. In this plan, registration of severed mineral rights and the existence of a market value for them would be a quid pro quo for the zoning of the land for mineral development. More generally, whenever an arm's length market value for mineral rights cannot be determined (because of a lack of sales of comparable property), the law could allow the mineral rights owner to set the value for these rights but require him to offer them for sale at this price. First option might go to the owner of the surface estate.[1]

Option C. State Use of Eminent Domain to Obtain Ownership of Unregistered Severed Mineral Rights, with Compensation.

This plan calls for a fundamental change in the structure of property rights, and may be regarded as an alternative to state taxation of privately owned mineral rights. The State of Wisconsin would exercise its powers of eminent domain and declare that it owns all unregistered mineral rights in the State. Eminent domain requires the showing of a public purpose as well as compensation.

The showing of a public purpose should not prove difficult. Among the public purposes that would be advanced are the following:

1. Encouragement of mineral conservation through firming up and clearly establishing property rights in the State's mineral resources--that is, identifying and clarifying the obscure and divided ownership conditions of severed mineral interests in the state (promoting security of tenure).

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[1] Such "market-enforced self-assessment" has been proposed for less developed countries; it is provided now under Florida law. An owner who objects to a value placed by the assessor may declare a lower "full market" value, but he must offer to sell the property at that lower value, at an advertised public auction. If a buyer appears, he must sell. See Strasma, J. (1965), and Holland and Vaughn (1967).

2. Promoting the orderly and efficient exchange of these mineral rights by making it easier for mining companies to identify with whom they must bargain (lowering transaction costs, making it easier for private landowners to establish their property rights and helping them anticipate future land-use conflicts.

3. Aiding state and local land-use planning; in particular, knowing who owns mineral rights would be an invaluable aid to state and local land-use planners who might be considering a mineral resource zoning plan, as suggested in this report.

4. Securing revenues for the State's citizens for the extraction of a natural resource currently left idle through doubt as to title, rather than for sound economic reasons.

5. This may also be regarded as a logical extension of State ownership of minerals under the beds of navigable lakes.

The law would provide that a person claiming ownership of mineral rights must file suit and show proof of title, to assert these rights with the county register of deeds, within a specified time period of say three years. Advertising in national mining journals, in newspapers both within and outside Wisconsin, and in other publications would advise possible owners of this requirement. If the rights are unclaimed, they they would revert to the State. However, a person may file suit to assert his right in a mineral interest after the initial statutory three-year period, for a period not to exceed say seven years. If he wins the suit, then he would be entitled to just compensation but not to the restitution of the mineral rights themselves; valuation would be at the value of the rights at the time the law was promulgated, and not at any higher value resulting from subsequent exploration. Compensation should not be expensive for the State, as royalties paid to the State should amply cover the value of rights whose owners belatedly appear.

One question here concerns whether the State or the county (under tax delinquency proceedings, perhaps) should acquire title to unregistered mineral rights. This requires further consideration.

Option D. Differential Taxation of Mineral-Bearing Land.

Article VII, Section 1 of the Wisconsin Constitution suggests the possibility that a differential (nonuniform) property tax on mineral rights could be enacted by the legislature:

> The rule of taxation shall be uniform but the legislature may empower cities, villages, or towns to collect and return taxes on real estate located therein by optional methods. Taxes shall be levied upon such property with such classifications as to forests and minerals including or separate or severed from the land, as the legislature shall prescribe. (Emphasis added)

Such differential taxation could be a means of influencing the rate of development of mineral-bearing lands at the county level. High taxation would likely promote development, while low taxation would not.

It appears that whereas only one classification of agricultural land may be established for purposes of property taxation (that is, all agricultural land must be classified in the same category, as all land in a conservancy district must be taxed at the same uniform rate), more than one classification of forest and mineral land may be established.

Among the possible classifications would be one class consisting of land whose mineral rights are unsevered, and another whose mineral rights are severed. A constitutional requirement of equal protection is that there be a reasonable basis for these classifications. As in the Minnesota case of Contos v. Herbst, a justification for taxing severed mineral rights as a separate class of property is that only a minute fraction of severed mineral rights are assessed for tax purposes (although they are not legally exempt from taxation) due to problems of ascertaining ownership, technical valuation problems, etc. If severed mineral interests are to bear a share of the property tax burden, then such interests would have to be taxed as a separate class and in a different manner than other interests in land. Unsevered mineral rights could also be assessed on an ad valorem basis as any other property, as is current practice (in theory). Severed mineral rights could all be valued for tax purposes at a certain value per acre, or they could be divided into two classifications: (1) those whose market value is known, and (2) those of unkown market value. Those of known value would be so assessed; the rest, whether or not their owners are identified, would be assessed at the certain value per acre. Alternatively, instead of assessing severed mineral rights of known market value and applying the local property tax rate, these rights could simply be taxed directly at a certain value per acre.

Since this per acre tax is probably still a property tax and not an excise tax, it would be subject to the uniformity of taxation provisions of the Wisconsin constitution. An Attorney General's opinion of January 8, 1974, states that the uniformity requirement still applies within the permitted classifications. Uniformity of taxation under Article VIII, Section 1 of the Wisconsin Constitution requires substantial uniformity of rate based on value. If a per acre tax were lieved on all severed mineral rights (including those of known market value and those of unkown market value), then this tax would likely be declared unconstitutional. However, if severed mineral rights could be reasonably grouped into these two classifications (those for which an arm's length market value can be found and those of unknown market value), then those of unknown market value could be taxed on a per acre basis.[1] It would thus appear that taxation is substantially uniform within each of these two classifications.

The Minnesota legislature concluded that the taxation of severed mineral interests in the same manner as other realty has proven to be impractical, infeasible, and, in short, a failure. Consequently, Minn. Stat. sec. 273.13(2a)(1974) provides that severed mineral rights of unknown value be subjected to a $0.25 per acre tax per year, or $2 per interest per year, whichever is greater. The constitutionality of this and other provisions is presently being decided in Contos v. Herbst.

It is important to note that the Minnesota and Wisconsin State Constitutions differ significantly with regard to the uniformity principle. Therefore, what may be upheld as constitutionally valid in Minnesota may well be invalid in Wisconsin.

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[1] Such a tax per acre would most likely be considered a property tax and not an excise tax.

Option E. Property Taxation Based on Market Value, or Taxation Based on a Presumptive Value, Plus State Confiscation of the Mineral Estate.[1]

Where possible, mineral rights would be assessed like any other real property. If the market value of mineral rights is undetermined, then a per acre presumptive value would be assessed. If either the property tax based on a known market value or the per acre presumptive value is not paid, then the state would put the mineral interest up for sale for delinquent taxes, giving the owner of the surface first right of refusal.

If registration of mineral interests is required, it will be relatively easy to check for delinquent taxes, just as it is easy now to discover surface ownership and tax responsibility. If mineral registration is not required or if the mineral rights simply have not been registered, the surface owner can escape or reduce his tax responsibility by proving through a title search that he does not own the mineral estate. It is not necessary to prove who currently owns the mineral rights, but only that all or part of them were severed at some time. If the surface owner can show that the estate has in fact been severed, then it is up to the mineral owner to assert his claim by paying the taxes. If he doesn't show that the estate has been severed, then after a specified period the state can confiscate the estate for delinquent taxes and either sell or hold the mineral rights.

This system, in effect, removes the necessity for registration of severed mineral interests, although registration is still highly desirable. It provides a mechanism for removing clouds on titles, makes possible the reunification of severed estates, and provides an indirect system for the registration of mineral rights (that is, the tax rolls).

No dollar value was specified for the presumptive tax. If the value is high, say $5 per acre, then speculators would be discouraged, as the tax for the mineral rights on a 40-acre tract would be $200 per year. By the same token, surface owners would be reluctant to pay $200 per year for mineral rights of unknown or probably zero value. Therefore they would probably not buy them from the State, thus defeating the objective of reuniting severed estates. The state would end up with most of the mineral rights, as it would be hard to rationalize the large expenditure for a worthless entity. Furthermore, many landowners would very likely let the tax go delinquent, thus losing the rights they already own. However, there would be great incentive for the landowner to determine whether he owned the mineral rights and was therefore liable for the tax.

If the tax is low ($0.10 per acre), the opposite is true. To save $4 per year on his tax bill may not be incentive enough for the landowner to try to prove that he does not own the subsurface. But it is relatively cheap for both landowners and speculators to acquire the rights. The answer must be somewhere between, $5 per and $0.10 per acre, or other incentives or disincentives for registering severed mineral interests must be added.

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[1] Suggested by William Pinkovitz, Department of Agricultural Economics, University of Wisconsin-Madison.

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APPENDIX I: TAXATION OF METALLIC MINES

Taxes are but one of many factors which a private firm considers in making decisions about when to commence mining, rate of production, cut-off grade, method of mining, and so forth. Other factors include the geology of the deposits, transportation economics, the business climate in the state, availability of a skilled labor force, the prevailing wage rate. Various land-use planning tools like transfer of development rights, zoning, and special land-use permits have been discussed and may also be used by government to try to encourage socially more appropriate timing and methods of mining.

A Special Study Committee on Mineral Taxation, created under Ch. 283 sec. 4, (1973) Wis. Laws recommended specific changes in the form of a tax package designed to secure tax revenues efficiently and equitably from present and future metallic mining operations in Wisconsin.

The package included a provision which would have affected the reservation of mineral lands, in that it would have established a net proceeds tax in lieu of a property tax on the value of minerals in the ground. This would be in addition to property taxes already paid on surface property and improvements.

Under existing law (Wis. Stat. sec. 70.91 to 70.98 (1973)), low-grade iron-ore property receives special attention. The State Geologist is required to certify to the Department of Revenue the mineral and iron-mineral lands that shall be included in the low-grade iron-ore property.

The law states (Wis. Stat. sec. 70.91(1) (1973)) that "beginning with the first year in which, prior to May 1, construction of a pilot or commercial plant for beneficiation or treatment of low-grade iron ore shall have commenced and up to and including the first full calendar year of production of merchantible concentrate from the low-grade iron ore property on either an experimental or commercial basis, such unit of low-grade iron ore property shall be taxed in each year" by a severance tax of 1.5 percent of gross proceeds of mining. The Secretary of Revenue shall notify the local assessor of the taxation district wherein such lands are located that the lands so designated are to be removed from the local property assessment rolls. In the event productive capacity of the beneficiation or treatment plant is later increased, the State Geologist shall determine what additional acreage of mineral and nonmineral lands shall be included in such low-grade iron-ore property on account of such an increase.

Producers of low-grade iron ore are the only mining operators in the state, under current laws, who are exempt from paying the property tax during mining years. The two currently operating zinc-lead mines in southwestern Wisconsin pay property taxes on their land and improvements (with machinery and equipment exempt), as would a future copper mine. (It is notable that the Statutes presume that the iron-ore rights are on the property tax rolls.)

Producers of low-grade iron ore are the only operators who are exempt from paying a general property tax on stockpiled ore, concentrate, power generating facilities, and lands bearing low-grade iron ore sufficient to maintain capacity of the operation of the mine. Copper mining operations pay property taxes on the value of the surface and improvements, but not on the ore in place. Zinc-lead operations pay the general property tax on the value of the surface and improvements and on the ore in place. Machinery and equipment of copper and zinc-lead mines are exempt (Wis. Stat. sec. 70.995, "State Assessment of Manufacturing Property," (1973)).

Under these conditions it is necessary to consider the economic effects of a mineral property tax on the reservation and development of mineral deposits. For example, why not apply the property tax to ore in the ground for operating mines?

Many economists (S.V. Ciriacy-Wantrup, Harold Grove, and others) suspect the property tax on ore in reserve for operating mines of accelerating depletion because the taxpayer may reduce the tax base by exhausting it. Gaffney (1967, p. 369) believes that the effect is overstated and quite weak for several reasons. Fred Peterson (1974, p. 1-21) notes that the effect of the property tax when investment and exploration are also included in the analysis may be to reduce its capital stock or proven reserves to decrease their tax base, so the effect on the extraction rate might be uncertain. Gaffney (1967, p. 371), however, concludes by saying that, in spite of his previous statement, there remains some tendency for property taxes on the ore in the ground ("in situ" values) to accelerate depletion.

Concerning the economic effects of property tax on mining methods, Lacy (1969, p. 2) notes that a property tax on a low-margin mining operation may, if high enough, eliminate any normal profits to the firm, even at full capacity. The operator would be forced either to (1) close down the mining operation as unprofitable or (2) raise the cut-off grade and selectively mine only the higher grade material. This second alternative is available to the firm only if the deposit is of such a nature that cut-off can be raised without resorting to highly selective mining methods and appreciably raising mining costs.

Raising the cut-off (the minimum grade of ore which it is profitable to mine to compensate for property taxes), with the possible accompanying rise in cost because of the required selectivity of mining, has the effect of markedly lowering the ore reserves in the bulk low-grade deposits. This effect is much less on small and rich deposits.

Lake (1962, p. 164) notes,

> There is no public record to show that in Wisconsin there was felt widespread inducement toward wasteful operations of this nature.... However, it is possible that considerable mining from under the tax occurred... in the zinc region after 1900--and quite possibly before--fee owners commonly leased their land to mining companies for a flat royalty per ton of ore mined. In 1911 the Wisconsin Conservation Commission pointed out that this situation encouraged some lessees to mine only the high grade ore. They left in the ground low grade ore which cost more per ton of refined metal to produce. The low grade ore was left because it required the same royalty payment to the lessor as a ton of high grade ore. The commission reported that "in the zinc district closer mining is done in the case of those companies who own the fee than those operating on the lease system." Here, then, was an instance where mining from under a royalty influenced mining practices and resulted in loss of usable ore.

The Special Tax Committee concluded that all mining companies, including producers of low-grade iron ore, should pay property taxes on all surface property and improvements and that the exemption on machinery and equipment should be returned. This is consistent with the property tax treatment afforded other manufacturing firms in the state. The machinery and equipment

exemption is considered by some to be an incentive to mobile firms to locate and produce in Wisconsin.

There are serious obstacles to assessment of the value of minerals in the ground for property tax purposes. Notable among these is that under the statutory provisions for equal treatment, it can be assumed that the method used for evaluation would have to be applied to all lands equally and to all minerals equally. The difficulties and costs of developing the information necessary to make such an equitable evaluation of all lands would be large and likely prohibitive in terms of the State budget.

In principle, a property tax could be levied on the entire value of a mine (land, improvements, and the ore in the ground) and on undeveloped reserves in the ground. Apart from the economic drawbacks cited, the exact value of the ore in the ground is quite difficult to ascertain. A local assessor could guess the amount of ore in order to obtain the property tax assessment. In so doing the government would impose a gamble with the firm. If the government over-estimated, the firm would lose, and, if the government under-estimated the firm would gain. The firm would bear much of the risk of misestimation. The risk could be lowered by provision for ex post facto readjustment, but this situation becomes complicated and subject to manipulation for private benefit.

Alternatively, the government could avoid trying to guess the amount of mineral in place by simply taking a share of the ore as it is extracted.

Presently, Wisconsin, like Minnesota, has separate severance taxes on low-grade iron ore, copper, and other metallic ores. For a fully operational low-grade iron-ore mine, the tax is 1.5 percent of a five-year average value. The value of the ore--in pellet form--is the Lake Erie price less freight costs, commissions, loading costs, and other allowable expenses. For copper and other metallic minerals from a fully operational copper mine, the tax is 1.5 percent of the market value (gross proceeds). The mining company submits this market value, basing it on company monthly reports and a published average price at the refinery.

With a severance tax--an excise tax "imposed for the privilege of severing natural resources from the soil"--the government shares the risk with the firm that discovery will be large or small, and thus the government reduces some of the burden of the gamble to the firm and avoids most of the later litigation and bargaining between the government and the firm.

In addition to its risk-sharing characteristics, the severance tax defers the tax until production (a great advantage to the firm).

Also, since severance taxes tend to postpone production as well as the tax, compared with a property tax the tax is unpopular with conservationists, for under the property tax a firm may want to mine and get out quickly in order to lessen the number of years in which it must pay the tax. The following are the economic effects of a net proceeds, severance tax.

1. A tax on net proceeds is perhaps the best measure of the firm's ability to pay, as it allows for varying costs and differing qualities and quantities of output. Since the tax falls upon the mine's profitability, it encourages the mining of low-grade ores and high-cost deposits, which other taxes might discourage.

2. Revenue returns are potentially unstable, as net proceeds vary due to price fluctuations, output, and cost changes. Under the progressive net proceeds

tax, revenues collected vary by a significantly greater percentage than do net proceeds. The net proceeds severance tax produces substantial revenues in years when both prices and the company's ability to pay are up and yields small revenues in lean price years. The state shares windfalls (gains and losses) with the mining firm without disturbing the rate structures every few years. Such a stable tax structure is welcomed by mining companies. This effect can be somewhat ameliorated by taking a moving average of net proceeds. The problem of variable revenue might be smoothed out by the investment and local impact fund (basically a trust fund) suggested by the committee. However, frequent and extensive fluctuation in revenue from a progressive net proceeds severance tax may not be serious at all, for fluctuation in revenue, when it coincides with general business fluctuations, might be regarded by some as an advantage of the tax rather than a disadvantage.

3. Severance taxes, by allowing the government to share with the firm the risk that the ore body will turn out to be large or small, avoid many of the problems of litigation and bargaining between the government and the firm that ore present under the property tax.

4. Conservation of a mineral resource occurs when the equilibrium rate of recovery is increased. Thus, conservation involves the redistribution of production from the deposit in the direction of the future or the expansion of the ultimate amount of total production from the ore deposit by lowering the critical grade and quality of acceptable ore, or both. Either of these adjustments in production lengthen the economic life of the exhaustible mineral deposit and delay the entry into new deposits.

Lockner (1962, p. 349) notes:

> ... if the progressive net profits tax does cause any adjustments in decision making by the mining firm, it tends to decrease the equilibrium rate of recovery, tends to increase the equilibrium level of recovery and, in the case of the mining monopolist, tends to increase the price of the mineral resource. Such an effect tends to lengthen the economic life of the mineral resource, a fund resource, and postpones the date of entry into new deposits, thereby promoting conservation in the extraction of the mineral resource. The occurrence and size of the adjustments would appear to depend on the characteristics of the tax rate schedule, the amount of annual profits and, in the case of the monopolist, the nature of its revenues, costs, and pricing and production policies.

5. A severance tax is generally based on reliable, equitable, and easily accessible information and does not require estimates based on meager knowledge or no knowledge of the resource or on unknown future conditions of market, technology, environmental regulations, social concerns, and other factors.

Given the problems of assessing the value of underground minerals for property tax purposes, a severance tax would appear to be preferable and certainly more workable. The tax base could be adjusted to approximate the mineral "property tax equivalent."

In contrast to mineral property taxes, or to specific or gross proceeds severance taxes, the net proceeds severance tax generally promotes efficiency of extraction and conservation of metallic mineral resources.

Basically, the committee's net proceeds tax proposal resembles Utah's "net proceeds of mines" tax. Utah applies a flat rate tax to the net proceeds of mining all metallic minerals. It uses the "gross value of ores or metals"--less cost of mining, treatment, transportation, equipment, administration, and state and local taxes--to arrive at net proceeds. Among other items, the mining company may not deduct the cost of the mining property or any payments for legal expense, interest, mining royalties, depletion, or depreciation.

The committee's proposal basically defines net proceeds as sales less the direct costs of mining and processing. Indirect costs, such as parent company expenses, would not be deductible. A progressive tax rate with multiple brackets was suggested, with the first $500,000 of net proceeds exempt from the tax.

Proposed Distribution of Net Proceeds Taxes		
State share	50%	
Local share	50%	
Shared taxes		25%
Investment and local impact fund		25%

The committee recommended that revenues be divided equally between the State and local units of government. The investment and local impact fund is a relatively new approach to reimbursing local units of government for the social and economic costs related to mining. It is a single account, not a fund for each mine location. It would be administered by a State board appointed by the governor and would be directed by law to distribute funds on an annual basis to local units of government that are impacted by mining. Communities impacted by mining activity would become eligible for funds by simply sending a claim to the board on an annual basis.

> The chief advantage of an Investment and Local Impact Fund is that communities can be provided adequate funding for the impact of mining. Rather than some per capita on percentage payment that may or may not adequately compensate the community, the board can distribute funds on a need basis so that the communities are properly compensated. An additional advantage is that funds can be invested over a period of time in order to build an economic base for a community at the time the mining operation ceases. By investing money over a period of years, a community can be prepared for the eventual loss of economic activity in the area when the mining company leaves.
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> The board would be comprised of five members, including three local officials (two municipal officials), one state official (revenue secretary,) and one private citizen. The members would be appointed to two-year staggered terms (Milbourne, 1976, p. 12).

APPENDIX II: EXCERPTS FROM MICHIGAN STATUTES ON MINERAL RIGHTS TAXATION

211.24 Property tax assessment roll; time, contents, method

Sec. 24. Procedure and form. On or before the first Monday in March in each year, the supervisor or assessor shall make and complete an assessment roll, upon which he shall set down the name and address of every person liable to be taxed in

his township or assessment district, with a full description of all the real property therein liable to be taxed. If the name of the owner or occupant of any such tract or parcel of real property is known, he shall enter the name and address of such owner or occupant as in this act provided, opposite to the description thereof; in all other cases the real property described upon such roll shall be assessed as "owner unkown." All continguous subdivisions of any section that are owned by 1 person, firm or corporation, and all unimproved lots in any block that are contiguous and owned by 1 person, firm or corporation shall be assessed as 1 parcel, unless demand in writing is made by the owner or occupant to have each subdivision of the section or each lot assessed separately; but failure to assess such contiguous parcels as entireties as herein provided shall not invalidate the assessment as made. Each description shall show as near as may be the number of acres contained in it, as determined by the supervisor. It shall not be necessary for the assessment roll to specify the quantity of land comprised in any town, city or village lot. The supervisor shall estimate, according to his best information and judgment, the true cash value of every parcel of real property and set the same down opposite such parcel. He shall also estimate the true cash value of all the personal property of each person, and set the same down opposite the name of such person. In determining the property to be assessed and in estimating such value, he shall not be bound to follow the statements of any person, but shall exercise his best judgment. Property assessed to one other than the owner shall be assessed separately from his property and shall show in what capacity it is assessed to him, whether as agent, guardian or otherwise. Two or more persons not being copartners, owning personal property in common, may each be assessed severally for his portion thereof. Undivided interests in lands owned by tenants in common, or joint tenants not being copartners, may be assessed to the owners thereof.

Metallic mining properties and rights, exemption, assessment, alteration, appeal. The state geologist, or his duly authorized deputy, shall determine, according to his best information and judgment the true cash value of the metallic mining properties and mineral rights consisting of metallic resources which are either producing, developed or have a known commercial mineral value, including such surface rights and personal property as may be used in the operation or development of the property assessed, also including any stock pile of ore or mineral stored on the surface. For the purpose of encouraging the exploration and development of metallic mineral resources, metallic mineral ore newly discovered or proven in the ground and not part of the property of an operating mine shall be exempt from the general property tax laws for a maximum period of 10 years or until such time as it becomes part of the property of an operating mine or it in itself becomes an operating mine. (emphasis added) Metallic mineral ore hereafter discovered or proven in the ground and part of the property of any operating mine shall be exempt from taxes hereunder until it, in combination with previously discovered metallic mineral ore of the operating mine, comes into a 10 year recovery period of said mine. An operating mine shall be defined to be an operatingmine as of the date of starting of a shaft or stripping of overburden, or rehabilitation of an abandoned or idle mine closed for not less than 2 years. No ore shall enjoy more than 10 years exemption from taxation. Nothing herein contained shall exempt from the general property tax laws ore reserves proven as of April 1, 1947. It is the intent of this act that mineral properties shall be valued and assessed in the future for ad valorem taxes in accordance with the formula used in the valuation of mineral properties prior to the effective date of this act. It is the intent of this act that no metallic mineral ore shall be exempt more than 10 years because of the application of this act and if at any time it becomes evident that such is the case the state tax commission shall determine the value of this untaxed ore and place this valuation on the proper tax roll. The state geologist shall report

his determination of the true cash value of the mineral properties to the state tax commission on or before February 10 of each year. The state tax commission shall assess the mineral properties containing 20% or more of natural iron per ton of ore in conformity and uniformity with all other property within the assessing district except that any difference between the rate of assessment of such other property and the rate of assessment of such mineral properties for the year 1963 shall be eliminated in 3 equal adjustments in the years 1964, 1965, and 1966. The state tax commission shall assess all other metallic mineral properties at the value certified by the state geologist. The state tax commission, as early as is practicable prior to February 20 shall certify the same to the supervisor or assessing officer of the township or city in which the same is situated, who shall in the case of such mineral properties and mineral rights which are owned separate from the surface rights on such property assess the same to the owner thereof at the valuation so certified to him; except that adjustment to the value certified by the state tax commission may be made by the supervisor or assessing officer of the township or city to reflect any general adjustment or assessed valuation from the prior year not included in the state tax commission computation. The supervisor or assessing officer shall determine the true cash value of the surface rights and assess the same to the owner thereof. The assessment upon the metallic mining properties and mineral rights, as herein defined, may be altered from year to year regardless of whether any previous assessment thereof has been reviewed by the state tax commission. The supervisor or other local assessing officer or the owner of any interest in the property assessed may take an appeal from the assessment and valuation of such property as determined by the board of review to the state tax commission which shall review the same as provided in section 152 of this act.[1] As ammended P.A. 1949, No. 285, 1, Eff. Sept. 23; P.A. 1963, No. 66, Eff. Sept. 6. Under Michigan Statutes, Secs. 211.1, 211,2, 211,27; all estates in land, including mining interests separately owned, must be assessed together. Curry V. Lake Superior Iron Company (1916) N.W. 19, 190 Mich. 445. Section 211.6a, Mineral rights assessed separate from surface rights

211.6a Mineral rights assessed separate from surface rights

Sec. 6a. Mineral rights consisting of metallic resources which have a known mineral value or are developed or are in production may be assessed separate from the surface rights in the property in which the same are situated if such mineral rights and surface rights are owned by separate owners. In case of separate assessment of such rights the terms "property," "real property," "land" and "parcel," or the plural each of said terms as used in this act, shall refer to and include such mineral rights or surface rights as the case may be: Provided, however, that the fact that such rights are not separately assessed in the case of the separate ownership of the same or that they are separately assessed in the case of the separate ownership of the same or that they are separately assessed in the case of common ownership of the same shall not invalidate such assessment or any proceedings had in regard thereto under this act nor shall the same constitute grounds fo rejecting such assessment or the taxes levied pursuant thereto.

Notes of Decisions

1. In general

Under C.L. 1897, 3824, 3825, 3850 (see, now, sections 211.1, 211.2, 211.27) providing that all property not expressly exempted was to include all lands and buildings, fixtures, and appurtenances except those expressly exempted by law, and

[1] Mich. Stat. sec. 211.152(1974)

that "cash value" was the usual selling price where the property was located, in determining which the assessor was to consider the value of improvements, minerals, etc., all the interests in real estate, including minerals separately owned, had to be assessed together, and it was unimportant whether the assessment was made to all, or to but one, of several owning interests or estates therein. (Curry v. Lake Superior Iron Co. (1916) 157 N.W. 19, 190 Mich. 445)

Michigan law states that mineral rights consisting of metallic resources not developed or not in production or which have not been explored shall be assessed separately from the surface rights in the property, if such mineral rights and surface rights are owned by separate owners, with exemptions noted below. The state assigns a presumptive cash value of $5 per acre to these several mineral rights.

211.6b Mineral rights consisting of undeveloped metallic resources; assessment separately from surface rights; exclusions

Sec. 6b. Mineral rights consisting of metallic resources which are not developed or which are not in production or which have not been explored shall be assessed separately from the surface rights in the property in which the same are situated if such mineral rights and surface rights are owned by separate owners: Provided, however, that such mineral rights which are owned by or leased to any person, corporation (or wholly owned subsidiary thereof) or copartnership engaged in the business of and actually extracting, producing or processing such minerals in the state of Michigan shall be excluded from the provisions of this section: Provided, further, that such mineral rights which are owned by any person, corporation or copartnership shall also be excluded from the provisions of this section whenever such person, corporation or copartnership is the recipient or purchaser of metallic mineral ores which have been extracted, produced or processed by or through contractual arrangements or undertakings with a person, corporation or copartnership who is engaged in the business of and who is actually extracting, producing or processing such minerals in the state of Michigan.

The ownership of metallic mineral rights separate from the surface rights in land shall be prima facie evidence of the presence and existence of metallic mineral resources in such land and that such metallic mineral rights have a prima facie true cash value of $5.00 per acre. The terms "property," "land" and "parcel" as used in this act shall refer to and include mineral rights or surface rights separately assessed under this section: Provided, however, that the fact that such rights are separately assessed in the case of common ownership of the same shall not invalidate such assessment or any proceedings had in regard thereto under this act nor shall the same constitute grounds for rejecting the assessment or the taxes levied pursuant thereto. The first assessment under the provisions of this section shall be made the second calendar year immediately following the year in which this section becomes effective. On or before December 31, 1967 owners of surface rights and of mineral rights whose respective rights are subject to separate assessment as herein provided shall file with the assessing officer of the township, village or city in which the land containing such separate surface or mineral rights is situated an affidavit containing an accurate description of each parcel of land in which such separate surface or mineral rights is contained with the number of acres contained therein, and a statement of their surface or mineral rights therein.
As amended P.A. 1967, No. 143 1, Imd. Eff. June 27.

1967 Amendment. Substituted the words "December 31, 1967" in lieu of the phrase "July 1 of the first calendar year immediately following the year in which

this section becomes effective" in the last sentence.

APPENDIX III: EXCERPTS FROM DEFENDANTS' MEMORANDUM OF LAW IN CONTOS V. HERBST

Chapter 650, Laws of 1973, Article XX, amended Minnesota's 1969 mineral registration act (Minn. Stat. sec. 93.52-58 (1974)) which had required all persons who claimed ownership of severed mineral rights to file a statement describing that interest with the register of deeds or registrar of titles in the county where the interest is located. The purpose of this requirement, as stated quite clearly by the legislature, was:

> ...to identify and clarify the obscure and divided ownership condition of severed mineral interests in this state. Because the ownership condition of many severed mineral interests is becoming more obscure and further fractionalized with the passage of time, the development of mineral interests in this state is often impaired. Therefore, it is in the public interest and serves a public purpose to identify and clarify these interests (Minn. Laws Chapter 829 sec. 1 (1969), coded as Minn. Stat. sec. 93.52(1)(1974)).

1973 amendments added two important provisions which have now become the basis for lawsuits. First, to ensure that the required filings would actually be made, the legislature provided that anyone who failed to file within the statutory period would forfeit his severed mineral interests to the state (Minn. Laws Chapter 650 Article XX sec. 6(1973), coded as Minn. Stat. sec. 93.55(1974)). Second, severed mineral interests not otherwise taxed were subjected to a tax of 25¢ per acre per year or $2.00 per interest per year, whichever is greater (Minn. Laws Chapter 650 Article XX sec. 3 (1973), coded as Minn. Stat. sec. 273.13(2a)(1974)).

LEGISLATIVE FINDINGS AND CONCLUSIONS RELATED TO THE TAXATION OF MINERALS OWNED SEPARATELY FROM THE SURFACE. The legislature finds, for the reasons stated below, that a class of real property has been created which, although not exempt from taxation, is not assessed for tax purposes and does not, therefore, contribute anything toward the cost of supporting the governments which protect and preserve the continued existence of the property. These reasons are as follows: (1) In the case of Washburn v. Gregory, 1914, 125 Minn. 491, 147 N.W. 706, the Minnesota Supreme Court determined that where mineral interests are owned separately from the surface interests in real estate, the mineral interest is a separate interest in land, separately taxable, and does not forfeit if the overlying surface interest forfeits for nonpayment of taxes due on the surface interest; (2) Since this 1914 decision, mineral interests owned separately from the surface have been valued and assessed for tax purposes, as a practical matter, only if the value of the minerals has been determined through drilling and drill core analysis; and (3) The absence of any taxation of mineral interests owned separately from the surface, except where drilling analysis is available, has encouraged the separation of ownership of surface and mineral estates and resulted in the creation of hundreds of thousands of acres of untaxed mineral estate lands which thus are immune from tax forfeiture. The legislature also finds that the province of Ontario in Canada, which has land ownership patterns and mineral characteristics similar to that of Minnesota, has imposed a tax of $.50 an acre on minerals owned separately from the surface since 1968, and $.10 an acre before that. The legislature further finds that the identification of separately owned mineral interests by taxing authorities requires title searches which are extremely burdensome, and, where no public tract index is available, prohibitively expensive. This result is caused in part by the decision in

Wichelman v. Messner, 1957, 250 Minn. 88, 83 N.W. (2d) 800, where the so called "40 year law" was held inapplicable to mineral interests owned separately from surface interests. On the basis of the above findings, and for the purpose of requiring mineral interests owned separately from surface interests to contribute to the costs of government at a time when other interests in real property are heavily burdened with real property taxes, the legislature concludes that the taxation of severed mineral interests as provided in section 3 of this article is necessary and in the public interest, and provides fair taxation of a class of real property which has escaped taxation for many years. The legislature further concludes that such a tax is not prohibited by Minnesota Constitution, Article 18. The legislature concludes finally that the amendments and repeals made by this act to Minnesota Statutes, sections 93.52 to 93.58, are necessary to provide adequate identification of mineral interests owned separately from the surface and to prevent the continued escape from taxation of obscure and fractionalized severed mineral interests (Minn. Laws Chapter 650, Article XX Section 1(1973), coded as Minn. Stat. sec. 272.039 (1974)).

The nature and extent of the problems identified by the legislature in both 1969 and 1973 are further illustrated in the amicus brief prepared by W.K. Montague for the case of Kangas-Jacobson Dairy, Inc. v. Lloyd-Smith, 241 Minn. 317 62 N.W. 2d 915 (1954). Mr. Montague who is listed "of counsel" on the letterhead of the law firm of Hanft, Fride, O'Brien and Harries, wrote the brief to urge the Minnesota Supreme Court to dispose of the Kangas case without invading the field of law relating to mineral reservations. In this 1954 brief, Mr. Montague, speaking from 35 years' experience in the practice of law in the mining area in Minnesota, described mineral reservations as follows:

> No decision should be made by this Court in any mineral reservation case without consideration of the following well known facts with respect to mineral reservations in this state.
>
> They are of wide extent: the entire length of the Mesabi Range from Funflint Lake along the border, down to Grand Rapids, to a width of probably twenty miles from the iron formation, is blanketed with mineral reservations; on each side of the east end of the Mesabi Range through Lake and Cook counties down to Lake Superior, a distance of fifty to sixty miles, nearly every forty has a mineral reservation. Large areas in Carlton and Crow Wing counties are similarly covered. While we are not familiar with details of mineral reservations in other Northern Minnesota counties, we understand they are not uncommon. Every city and village on the Mesabi Range from Aurora through Eveleth, Virginia, Chisholm, Hibbing, down to Coleraine, is located on lands subject to mineral reservations. Every home, store, factory, and farm in that area is subject thereto.
>
> These reservations assume many forms: they vary from the early simple reservation of minerals with the right to explore for, mine, and remove the same, and to use so much of the surface as might be necessary for that purpose, through various intermediate forms providing full or partial compensation, down to the rock bottom--and not unusual--provision permitting the caving, subsidence, stripping or destruction of the surface without any liability for damages whatsoever.
>
> These reservations are almost purely speculative. No one in Minnesota ever sells the surface to the land if there is good reason to believe that it is underlain with merchantable ore; he hangs on to the surface for dear life. It is where merchantable ore has been negatived by exploratory work, or where there is only

a remote speculative possibility of merchantable minerals occurring, that the surface is sold and the minerals reserved. This is true to such an extent that the local taxing authorities have found no feasible way whatever of taxing such reservations; no market value can be assigned to them. In a great many cases no attempt has been made to preserve good title during the probate of estates, etc., as a result of which locating individual owners of the minerals is sometimes a job for a detective agency.

As least in the case of iron ore mining on the Mesabi Range, every removal of the minerals, whether by open pit operations or by underground methods, inevitably results in the stripping or caving of the surface over the ore removed.

In a substantial number of cases the reservations were created as a result of the tax laws, and do not represent arm's length negotiations between parties. In Washburn v. Gregory Co. (1914), 125 Minn. 491, 147 N.W. 706, this Court held that a tax lien against a specified legal description of land did not attach to the mineral estate (where there had been prior severance of surface and mineral estates by instrument of record) unless such mineral estate was specifically described in the proceedings. The decision--sound as it was--immediately offered an opportunity for the owner of wild lands to preserve his speculative mineral interest without being tagged as a delinquent taxpayer; where the surface of his land was of little value he could deed to a "dummy" third party; reserving the minerals with complete right to cave or subside the surface without payment of any damages. The practice became common in the tax delinquency days of the 1930's. Many areas in the Lake Superior National Forest were deeded to the Federal Government after such mineral reservations had been created. With the return of mining activity, and especially as taconite operations began to require the accumulation of large areas of land, the surface again assumed some value, and, by redemption from tax forfeitures and proceedings to set aside the tax forfeitures, title was re-acquired. Such reservations do not reflect an arm's length bargain between the original parties. They represent deliberate attempts to arrange a transaction under which the grantor could retain for generations his speculative interest in the minerals without carrying charges, and if merchantable ore should ever be discovered, could re-acquire the surface without cost (Amicus Brief of W.K. Montague, Kangas Jacobson Dairy, Inc. v. Lloyd-Smith, 241 Minn. 317, 62 N.W. 2d 915 (1954)).

Plaintiffs' situation provides a dramatic illustration of the problems described by the legislature and by Mr. Montague. The plaintiffs' collectively own interests in 1,261,424 acres of severed minerals. Except for a few acres which are taxed under other laws (approximately 3,212 acres in 1974), these 1,261,424 acres of severed minerals have not been taxed since severance from the surface. Thus, while not constitutionally exempt from taxation, they have enjoyed the same tax-free status as churches and schools (Warren Spannaus, Attorney General, Steven G. Thorne, Special Assistant Attorney General, Department of Natural Resources, et.al., Defendants Memorandum of Law, File No. 400979, Contos v. Herbst, State of Minnesota, County of Ramsey, District Court, Second Judicial District, 1975). Plaintiffs' complaint contains essentially the following

allegations:

> 1. That there is no rational basis for the treatment of severed mineral interests as a separate class for tax purposes, that is that the classification is arbitrary, and therefore, that it violates not only the equal protection provisions of both the state and federal constitutions but also the state constitutional prohibition against special or class legislation.
> 2. That the uniformity clause of the state constitution and the equal protection and due process clauses of the federal constitution all require that taxes be absoluatcly uniform according to value; that severed mineral interests vary widely in value; and that as a result a flat rate tax of 25¢ per acre on severed mineral interests is constitutionally impermissible.
> 3. That various portions of the statute are void for vagueness under the due process clauses of the state and federal constitutions.
> 4. That because severed mineral interests which are not filed within the statutory period forfeit by operation of law without opportunity for prior hearing and with only such notice as was provided by the publication of the entire act three times in both 1969 and 1973 in each county of the state and once in two national mining magazines, such forfeiture amounts to a taking of property without procedural due process in contravention of both state and federal constitutions (Warren Spannaus, Steven G. Thorne, et. al., 1975, pp. 6-7).

Note: The decision from the District Court, Second Judicial District, Ramsey County, on Contos v. Herbst is expected soon.

Chapter V

COMMUNITY IMPACTS AND ACCEPTANCE OF MINING OPERATIONS

by

Dick Barrows* and Bruce Webendorfer*+

ABSTRACT

Mining, like other types of industrial activity, is often associated with a boom-and-bust cycle of economic activity. The opening of a mine often brings rapid increases in population to previously depressed rural communities. Extra public service costs may be extreme in rural areas. As mining activity is reduced or stopped, mine workers face the unpleasant prospect of either extended unemployment or a move to another community.

As the underlying and essential element of any larger program of impact to a community, it is recommended that the State establish or formalize a program of technical assistance to communities which might experience the economic and social impact associated with mining. Careful consideration should be given to an impact fund financed through mineral tax revenues, to be used only after the communities and companies engage in cooperative efforts to solve the impact problems at the local level.

INTRODUCTION

Mining, like some other types of industrial activity, is often associated with a boom-and-bust cycle of economic activity. The opening of a mine often brings rapid increases in population to previously depressed rural communities. Jobs increase locally both in the mining industry and in wholesale and retail businesses. Incomes may increase as the wage rate is bid up by the new mine and as increased spending pumps more dollars into the local economy. But not all local people benefit from the boom, and local governments face great problems in providing for increased public services. For example, the boom may hurt local farmers, who may find farm labor unavailable or increasingly expensive, and local tax rates may rise as the local government supplies more roads, schools, sewers, water, and other services to the new development. These extra public service costs may be extreme in rural areas where a new mine doubles or triples the population, where public services are expensive and perhaps inadequately funded, and where the quality as well as the amount of services must be increased. These extra service costs may weigh heavily on long-time residents whose incomes are low and who do not benefit directly from the mine.

Although the boom part of the mining cycle benefits many local citizens, the closing of the mine and the resulting bust means hardship for most. As mining activity is reduced or stopped, mine workers face the unpleasant prospect of either extended unemployment or a move to another community. There is little likelihood of finding other employment locally, since the other sectors of the local economy, such as retail trade, will also be contracting due to the decline in mining. The only hope for maintaining local employment is that another industry

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will locate in the community and counter the adverse effects of the mine closing.

The price structure and salability of a given mineral may fluctuate because of the international nature of most mineral commodities. Individual mining operations are managed with the conditions of the international market in mind. Thus world demand for a mineral can rise but local production decline because it is more profitable to produce elsewhere. Similarly, changes in technology can move a mineral deposit from merely a resource to a reserve, and also from a reserve to a resource.

During the 1950's, for example, the Lake Superior iron-mining industry underwent a technological revolution with the development of processes for large-scale treatment of low-grade material to produce high-grade agglomerates--the taconite pellet. The pellets are ideal furnace feed. The net result has been displacement of direct-shipping ore (the Wisconsin product) by pelletized concentrates produced from low-grade ores. As a result, the Wisconsin iron-ore industry closed, although high-grade, direct-shipping ore remains in the ground--the product is not salable today.

Another factor is that labor unions have less strength than might be assumed from their size when they are dealing with companies that can step up production at other mines in other parts of the world when a strike is threatened. A 1968 strike at a Michigan copper mine involving over 2,000 workers resulted in the closing of the mine. Naturally, marginal mining operations are much more susceptible to the instabilities mentioned than more productive mines. Regardless of the reason, most mines have a finite life, and closing means an economic bust in the local area. The production cycle flows from the very nature of mining operations.

COMMUNITY IMPACTS AND ACCEPTANCE OF MINING OPERATIONS

The severity of the public service impacts on a given community will depend on a number of factors, not all of which can be identified ahead of time. The density of the population in the area, or the number of communities near the mining site, is perhaps the single most important factor. If the population increase caused by the mine can be spread throughout a number of communities, the impact on any one community will be small. A very large mine surrounded by small communities could cause major impacts in many of the communities, depending on the settlement pattern of the new residents. The level of services provided by a community and the capacity of those services also have an important bearing on the severity of the impacts. An increase in population might cause a community to provide services that it has not provided in the past. For example, a town which in the past has contracted with a nearby city for fire protection or with the county for police protection might be required to provide these services on its own. A community might also need to upgrade the level of services that it already provides if those services reach their natural capacities or thresholds. New classrooms might need to be built, improved sewage treatment facilities might be in order, or roads might need to be widened. This interrelationship between the size of the mine, the density of population in the area, and the type and levels of public services will be the major determinant of the public sector impacts of a new mine. An important point to consider is that the site of the major impact might not coincide with the site of the mine. The impacts depend partially on the settlement pattern of the new residents.

The costs of a mine to a community can also occur at three different times: during the construction phase, at the beginning of operation, and after the

closing of the mine. The impacts can be different at each of these times, and any plan for helping communities with the costs of mining will be designed to provide aid during all three of the stages. An outline of possible costs is presented below.

The expected severity of construction phase impacts is usually mitigated by the fact that construction workers are generally transient. Experience has shown that nonlocal construction workers either commute from their homes in neighboring towns and counties or, when this is not possible, try to find rental housing for the week and return to their homes for the weekends. Even in large construction projects lasting several years, relatively few construction workers move to the area with their families. The resulting impact on the school district is thus likely to be small, and the impact will be minimized on the housing market. Because of the temporary nature of their work in any one location, construction workers usually prefer rental accommodations. In an area oriented to a seasonal, tourist economy, the impact might be very small, as such areas have excess capacity in housing during the off-season, and owners might prefer year-round occupancy to temporary tourist occupancy. Mobile homes have been found in many studies to be an extremely important source of housing for construction workers, particularly those who do bring families. Large mobile home developments can, of course, create problems for the community with regard to sewers, water, and roads. The construction and upgrading of roads can be a major cost during the construction phase, because of the movement of heavy equipment to and from the site. Nonquantifiable impacts, such as the danger of increased traffic and noise and dust problems, can be significant during construction. The existence of a large transient work force in the community can create social problems, and police services might have to be improved. Finally, the impact of heavy construction equipment on the roads can lead to increased costs for maintaining and upgrading roads.

The adverse impacts to a community are often greater during the beginning of the operation phase of the mine. It is during this time that permanent personnel, both supervisory persons and workers moving into the area to work at the mine, create a demand for permanent housing. New housing, of course, means possible increases in school costs, and in the cost for provision of roads, sewers and water, and police and fire protection.

The major public costs include unemployment and resulting welfare payments, and the burdens involved if communities have failed to amortize fully any capital investments made to service the mine. As the tax base contributed by the mine gradually erodes, a heavier tax burden is left for the rest of the community. The impacts at this stage can be minimized through proper local planning during the first stages.

In some cases the costs involved with a new mine will be slight. This has been the case in Jackson County, Wisconsin, with the iron mine which started operating in 1969 after a two-year construction period. The new population was distributed among a number of moderate-sized communities, and the impact on any one was slight. Some communities in other states have had a considerably more difficult time dealing with mining impacts.

An example of the kind of impact that can result is in Mercer County, North Dakota, the site of a large-scale coal-mining venture in recent years. The school districts in the county have bonded themselves to the limit and doubled their construction levies to take care of the moderate increases in population. Mining activity is expected to increase in the next several years. The state has

provided a small amount of money to the districts through the Coal Impact Office, but the money has only been enough to enable the districts to pay for maintenance which had been put off for years, and to build a few extra classrooms to accommodate the growth of recent years. The districts have assumed heavy debt obligations, and are unable to plan and provide for expected new growth.

Even a state with a mechanism for dealing with the costs of mining to communities is beginning to find that the costs are greater than the fund can manage. Further, several communities in North Dakota are beginning to use the zoning power to block development of coal-conversion plants because of the public costs involved with such development. The lesson for Wisconsin is that if public acceptance of mining is to be encouraged, a mechanism to help communities deal with increased public costs will have to be considered.

Although the expansion and contraction cycle is inevitable, there are policies which local and state governments can adopt to soften the adverse effects of the cycle. Most of the events in the private sectors of the local economy are beyond direct public influence or control, but government can act to insure that the adverse impacts on the public sector are minimized. In particular, public policy can minimize the influence of the cycle on local property tax rates and the taxes of local people, and the fiscal impact on local government.

Examples of Impact Control: Wyoming, Colorado, Montana

Although the projected base-metal mining in Wisconsin is not of the type or the magnitude of energy mining in the west, some of the mechanisms that have developed to alleviate the impact of mining development in the west may be instructive to Wisconsin planners and legislators.

Programs for providing impact aid to communities have been established by several western states experiencing large-scale energy development. The approach taken and the experience in three of those states--Montana, Wyoming, and Colorado--will be discussed below. Following this will be an examination of a relatively new idea--the local impact tax--and its possible use as a means of mitigating the adverse public cost impacts of mining. Finally, specific principles which should be included in any program for impact to local communities will be outlined and policy alternatives for Wisconsin summarized.

Wyoming

In 1975 the State of Wyoming passed three pieces of legislation which state officials feel will provide a solid framework for dealing with the impacts of mining, other industrial development, and rapid residential growth. The first of these acts created a Community Development Authority (CDA) as a means of providing assistance to both public and private sectors. The act was promulgated because it was felt that conventional planning and financing mechanisms could not provide the rapidly expanding population of the state with necessary facilities and services. The authority consists of a ten-person board--seven appointed by the governor with the approval of the senate, the governor himself, the state treasurer, and the executive director of the CDA--and is empowered to issue up to $100 million in revenue bonds.

In the public sector, the CDA can lend money to any local government or state agency on whatever terms it deems advisable. The board undertakes a public

project only upon finding that:

1. An acute need for the project exists and the facility cannot be provided adequately by conventional financing services;

2. the project is suitable for the purpose;

3. the project will ultimately be leased or owned by the local government.

CDA projects may include educational, cultural, recreational, community, municipal, public service, or other civic facilities, including sewer and water systems, roads, street lighting, parking, schools, airports, hospitals, swimming pools, public buildings, and land necessary for these and other projects. Local need does not necessarily have to be related to industrial impacts.

In the private sector, the CDA provides loans to financial institutions so that additional mortgage money will be available to prospective home buyers. A lack of mortgage funds in private lending institutions has created a shortage of adequate housing in some parts of the state. Two actions can be taken to encourage the provision of needed housing:

1. The CDA may purchase or take assignment of mortgages from local lenders, thereby providing the lender with additional financial resources for making mortgage loans in needy communities.

2. The CDA may make loans directly to mortgage lenders conditional upon the lender committing the entire amount of the loan to new residential mortgages.

Along with this action, the CDA may set eligibility standards for persons utilizing such mortgages, place restrictions on the location and other characteristics of the residences so financed, restrict the interest rates of loans, set schedules of fees necessary to provide expenses and reserves of the authority, and set rules and regulations regarding the resources of the mortgage lenders to finance adequately housing needs resulting from mineral extraction or other industrial development.

Bonds issued by the CDA may be repayed by the revenues from the lease, mortgage, or sale of the projects or from any of the authority's other income. There are three basic ways in which the bonds are repayed:

1. A portion of the Wyoming mineral severance tax revenue is dedicated to the debt service of outstanding bonds. The CDA may establish a special reserve fund into which is placed a one-half percent tax on fossil fuels.

2. Payments from municipalities can come from any one of a combination of methods, including (a) service charges, rent fees, and other income derived from the operation of the service; (b) loans, grants, or contributions to the municipality from the federal government; (c) proceeds from sales or excise taxes levied by or credited to the municipality. To aid local governments in this endeavor, the legislature increased the local share of the state sales tax from one-sixth to one-third.

3. The legislature may also use general funds to cover principal and interest outstanding on bonds. This provision was intended to provide communities with assistance during the first few years of mineral or industrial related growth, but could also be used as a mechanism for channeling additional funds into severely impacted communities.

The Wyoming legislature passed a second bill to establish an Industrial Siting Administration within the governor's office and a seven-member Industrial Siting Council, to be appointed by the governor. The immediate purpose of the act is to control the siting of energy-related and other major industrial facilities in the state. Certain energy-related developments, such as small strip mines which do not require large capital outlays, do not come under the act. The act establishes a permit system under which an organization wishing to construct an industrial facility must meet certain criteria provided in the legislation and in the rules and regulations formulated by the Industrial Siting Council. Several broad areas must be considered in the application and by the council in formulating its decision. Among these are the purpose of the facility and its impacts on land use, water resources, air quality, solid waste, radiation, noise, and the social and economic systems of the areas.

The social and economic impacts must be evaluated thoroughly, and the application must consider the impacts of the facility on land-use patterns, economic base, water supply, rate of population growth, growth of satellite industries, housing, transportation, sewer and water, solid waste, police and fire protection, recreation, schools, libraries, and health facilities. Before being granted a permit, the applicant must convince the council that the impact on all these areas is acceptable, and that any adverse impacts can be reduced to an acceptable level considering the state of available technology and the economics of various alternatives. The applicant must propose plans for alleviating the impacts of the facility and, in doing so, analyze conditions as they now exist, as they would exist in the future were the facility not built, as they would exist were the facility built and no plans implemented to alleviate the impacts, and as they would exist if the facility were built subject to the proposed plan for alleviating the impact.

Based on the information contained in the application, the council may approve the facility and issue a permit, issue a permit conditioned on certain changes in the proposal, or reject the application and require further study. The director of the Industrial Siting Administration may levy fees to cover the costs of evaluating each proposal. Finally, each applicant must submit a long-range plan delineating construction expansion and operating plans for the facility for the next five years. This requirement provides an advance warning to local governments of expansion and changes in construction schedules.

The third act passed by the 1975 Wyoming legislature was the State Land Use Planning Act. The act created a State Land Use Commission, and provides for the development of land-use plans at the local and state level. The commission's purpose is to guide land-use planning within the state, and to achieve this goal it is directed to hold public hearings to determine statewide goals, policies, and guidelines. All counties are required to develop land-use plans which incorporate the plans of all incorporated cities and towns within the county. If a local government fails to submit a plan, the commission may develop a plan for that community. This approach involves a synthesizing of municipal plans into county plans, and county plans into a state plan. Holding all the elements together are the goals, policies, and guidelines formulated at the state level.

The Office of Land Use Administration--the staff of the commission located in the governor's office-is directed to establish an information service to provide an updated land use inventory of data sources in the state and to establish a system for referring this data to other government agencies. The director of the office may make grants to local governments for carrying out planning programs,

thus providing an incentive to municipalities to develop the required plans.

The three acts described above were enacted together, and they should be considered together in analyzing Wyoming's approach to mitigating the impacts of mining and concurrent development. The three acts seem to complement one another and work toward the same end: encouraging the private and public sector to work together toward solving the problems of the community impacts of energy development, and ensuring that both state and local governments become involved in the problem-solving process.

The Industrial Siting Act has as one of its major virtues the ability to establish a dialogue at the local level between companies proposing facilities which will have a significant impact and the communities which will experience those impacts. Because the companies must provide a great deal of information on the local situation, on possible impacts on the community, and on plans for dealing with those impacts, close contact with communities is difficult to avoid. The very detail of the application helps highlight the issues so that they cannot be hidden from local governments. In effect, there exist in the act two incentives for a company proposing large facilities to cooperate with local units of government. One incentive stems simply from the fact that the act brings into the open and under public scrutiny the company's development plans. Because the act forces openness, large coal- and energy-related corporations have everything to gain by working with communities in solving the problems of energy development. The second incentive is that a permit to develop can be withheld by the siting council.

The land-use act seems to work with the siting act in encouraging cooperation between local governments and companies. First, the act provides the foundation on which the dialogue can take place by requiring local planning. The local planning requirement, and technical aid provided by the state for carrying this out, give the community an information base which otherwise would not have existed and without which dialogue is difficult. Second, the siting council must consider local-land use plans in making their decision, which insures that the development plan cannot ignore the community's expressed goals and plans for the area. Through the local land-use plan, a community can have a strong influence on major industrial siting decisions.

The Community Development Authority supports the process by insuring that front-end money is available to communities which need to expand services in the wake of industrial development. The CDA provides the major public financial input into the task of alleviating impact problems.

The impact problem is thus approached from at least three angles: the companies involved have a direct responsbility to help minimize impacts, local government provides input through the land-use plan, and the state oversees the process through the siting act and provides strong financial support to local governments through the CDA. Perhaps the most significant aspect of Wyoming's approach to minimizing the adverse impacts of the boom-and-bust cycle is that the state does not rely on one piece of legislation but on a set of laws comprising a unified policy. In this way, the weaknesses of each law are overcome by the other laws dealing with the common problem, and loopholes in state regulations are minimized.

In addition to the three major laws discussed, the 1975 Wyoming legislature also passed less comprehensive legislation to deal with the impacts of energy development. Most relevant for our discussion was the adoption of a special coal severance tax. The tax is administered by the existing Farm Loan Board and

is to be disbursed for use in areas directly or indirectly impacted by coal mining. At least 60 percent of the revenues must be used for road projects, and remaining money may be used only for sewer and water systems. Applicants for funds must indicate that insufficient local revenue sources are available for the projects and must show the necessity of the project. The tax is to be collected until the collections reach $120 million. Because the tax collected is not expected to reach even $1 million for several more years, of which 60 percent must go for roads, the effect of the act in alleviating coal mining impacts in the near future is expected to be minimal. The State Attorney General has ruled that the coal tax revenues must be in the state treasury before money can be expended, which further minimizes the immediate benefits of the law. For these reasons, the special tax was not discussed with the other three laws; it can be expected, however, that in the future the coal tax will be, within its limited area of roads, sewer, and water, a significant contribution to impacted communities.

Colorado

Colorado seems to be working toward an approach similar to Wyoming's for dealing with the impacts of large scale energy development in the western Colorado oil shale counties. The major difference is that Wyoming has, as we have seen, enacted several major pieces of legislation, while Colorado has at least a dozen bills dealing with the impacts of energy development pending in the state legislature. The discussion below will touch briefly on several of the proposed pieces of legislation and concentrate on the overall approach to the impacts problem being developed by the office of the Oil Shale Coordinator within the governor's office.

The primary source of direct state aid to communities experiencing energy related development impacts has been the oil shale lease money paid by the federal government to the state. The legislature, through the Joint Budget Committee and the Energy Council, has used these monies to aid communities in western Colorado experiencing the impacts of energy development. Legislation being considered in 1976 includes a bill to establish a Colorado Energy Impact Authority, which would administer a fund created primarily from oil shale lease monies. The monies would be used to underwrite local efforts to solve impact problems by guaranteeing the payment of principal and interest on bonds issued by local governments for facilities and services necessitated by energy development (House Bill 1240, Senate Bill 115). Such projects would include virtually any public service or civic facility thought necessary for the welfare of residents in an impacted area.

House Bill 1227 would establish an authority for allocating the proceeds of a mineral severance tax in Colorado. The authority would have the power to issue bonds which would be retired in part from the proceeds, and would use its funds to participate with local governmental units in meeting front-end capital requirements brought about as a result of new energy development. The authority would have the power to guarantee repayment of local bond issues, to make grants not exceeding 10 percent of all costs of financing and completing the project and the total cost for the first two years of operation of the wages, salaries, and benefits of necessary employees. Loans to local governments would not exceed 90 percent of the cost of the project. As with the bills mentioned above, virtually any civic service or facility would be covered by this bill. There is apparently no clear mechanism for separating those services required as a result of energy development and those simply desired by local residents, other than a provision

in the bill that there must exist in the area an "acute need" for the project.

House Bill 1253 would establish a state energy facility program and create a review and permit process similar to that in Wyoming's major facilities siting act. The act would cover all large energy-generating, conversion, or demonstration facilities and require that the developer describe in detail the impacts and methods for mitigating the adverse impacts of the facility. Procedures are provided for advance meetings between the applicant, the siting board, and the Department of Natural Resources, prior to an actual application for a permit. During this phase of the process, local governments are informed and given a chance to comment on the facility, as are other state agencies. The preapplication procedure must begin at least six months prior to a formal application. The formal application process requires that a portion of the application fee be allocated to affected local governments to help such governments investigate the application. The granting of a siting permit may include such conditions as the board thinks appropriate. The bill is thus similar to the Wyoming siting act but would lack some of that law's strength, in that the Colorado siting process would not be directly tied to mandatory local land-use planning.

Senate Bill 119 provides that the general assembly make annual appropriations, through the department of local affairs, to local governments as state energy impact aid. An "energy impact resident" is defined as a wage earner residing within the jurisdiction of a local government who is a resident of that jurisdiction primarily because he is employed by the energy producer or a contractor of the producer. The term "energy impact resident" includes members of the wage earner's household. To receive aid, a local government must certify the net increase in energy impact residents in its jurisdiction during the preceding year and the percentage of the total annual appropriations made for the impact and as the percentage of that local government's property tax levy is to the total property tax levey of all the local governments eligible for impact aid.

There are other bills pending in the Colorado legislature dealing directly or indirectly with impact aid, but the bills described above appear to be the major legislative proposals. Perhaps more important than proposed bills are the attempts being made within the executive department to coordinate efforts to alleviate impact problems and the general philosophy behind these attempts. Efforts revolve around the idea that all parties concerned with energy development--federal, state, and local governments and the companies proposing the development--have a share of the responsibility for alleviating adverse community impacts. The initial and primary thrust for solving these problems could come at the local level, however, and involve a cooperative effort between the local governments and companies involved. This appears to be similar in spirit to the mechanism that Wyoming has established, perhaps unwittingly, in its combination of local planning and facilities siting, and the dialogue which the siting act will force at the local level.

This overall conceptual approach has given rise to a set of principles for impact aid:

1. Direct state aid should not be the major or the first source from which money to alleviate impacts should come. On the basis of this idea, funds allocated to the western Colorado municipality of Craig have been made contingent by the Joint Budget Committee on similar funds being provided by the power company causing the increased public service costs. Presumably, this places some pressure on the industry to provide grants or loans to the community for two reasons; first, because the committee's provisions indicate a

policy on the part of the state that might lead to more stringent requirements in the future if the company doesn't cooperate, and second, because in some instances a refusal of state financial aid will mean either an inability on the part of the company to carry through the project or greatly increased costs to alleviate adverse impacts and overcome local resistance. In Craig, the power company developing a large energy generating facility has responded well and has provided several hundred thousand dollars to the community for the development of various services.

2. A common information base is seen as a necessity. A problem with energy development in the western states has been that the companies involved with the development have been less than totally candid about their development plans and about the impacts of those plans on nearby communities. This, of course, makes it extremely difficult for local governments to deal with large companies on an equal footing. To remedy the situation, the Oil Shale Coordinator's Office is urging the establishment of a common information system to serve as a source of data for the private sector and all levels of the public sector. Such a system could include a growth monitoring system to evaluate housing trends, industrial plans, public facilities placement, and other indicators of regional growth. A growth-monitoring system would provide a common data base on which companies could rely to make siting decisions and evaluate impacts, and which state and local governments could use to make their own decisions and estimates. Presumably, a common source of data would help overcome the problem of different impact estimates by different parties. Dialogue would thus be encouraged at the local level, though in a more subtle manner than in Wyoming, by helping communities stand on an equal footing with developers in terms of information. The approach, then, is one of providing technical aid to communities to enable and encourage them to undertake local planning. This approach seems to be a good one for rural Colorado, where the idea of state or regional agencies planning for local governments is viewed as an unhealthy intrusion into local autonomy. Although the idea of even local planning is anathema to many rural people, when faced by large-scale development pressures it is hard for them to resist the idea as a means of preserving a way of life. When this realization occurs, technical assistance would be available to help the communities.

3. Local growth management programs are being encouraged in an informal manner. There are a wide variety of new tools for land-use control available to local governments, as the police power has been broadly interpreted by the courts in recent years. Along with any program of technical assistance, then, would be information regarding land-use controls to help communities minimize the impacts of large-scale development.

4. A great many state and federal agencies administer programs which directly or indirectly provide aid to communities faced with the impacts of large industrial development. The problem is that these programs are rarely coordinated, and that local governments are rarely aware of the variety of avenues available to them for aid. To remedy the situation, the Oil Shale Office has prepared a booklet listing the many government agencies and programs from which aid might be available and who to contact at these agencies. (The Wyoming State Land Use Commission is preparing a similar publication.) Directing local governments to agencies with discretionary money is thus another means of avoiding the establishment of a large state fund which communities might look upon as the primary source of aid for impact problems.

5. When a community does apply through the Oil Shale Coordinator to the state legislature for money to relieve energy-related impacts, it is urged to do so through a regional planning commission or council of governments. This provides a filtering effect and helps separate needs from wants. The application for direct state aid is thus tempered through at least three reviews: at the regional level, in the energy council, and finally in the Joint Budget Committee.

The approach being developed in Colorado is thus one in which incentives are being provided for all parties involved in the problems of energy development to help solve those problems. Some of the legislation pending in the Colorado legislature seems to have the potential to greatly increase direct state subsidies to impacted communities and thus undermine the concept that local governments and th private firms involved should make the first attempt at solving impact problems. It will be of interest to see what direction the state takes on impact aid in the next few years.

Montana

Montana has received much attention in the past year because of its 1975 law requiring a prepayment of property taxes by major industrial facilities, including, of course, mines. The prepayment law is an attempt to provide front-end money to communities experiencing the impacts of development. The costs of development begin when development begins, but there is a time lag of a year or so before property tax revenues from the new development become available; the prepayment of property taxes is one way to remedy this situation. While the prepayment law is not the only component of Montana's approach to dealing with impact problems--the law has yet to be used by a local government--it represents a unique approach and will be discussed at some length here. A discussion of other Montana laws relating to mining and energy development impacts will follow the analysis of the prepayment law.

The Montana prepayment law provides that a person intending to construct a new major industrial facility shall, on request of the county commissioners of the county in which the facility is to be located, prepay an amount equal to three times the estimated property tax due the year the facility is completed. A major new industrial facility is defined as a manufacturing or mining facility which will employ an average of 100 people annually in the construction or operation of the facility and will create a substantial adverse impact on state, county, or municipal services. The prepayment may be made in installments as needed by local governments. When the facility is completed and assessed, it is taxed as any other industrial property, except that one-fifth of the amount prepaid is allowed as a credit against property taxes in each of the first five years after the start of normal production at the plant.

While the concept of prepayment appears sound, the law as enacted fails to consider a number of questions. The most important of these questions were raised in a report to the Montana legislature by the Departments of Revenue and Intergovernmental Relations; most of the points raised in the report were subsequently ignored by the legislature. Presented below are the key issues pertinent to the prepayment concept, which were raised in the report:

1. Financial impact statements should be required, although the act as passed requires none. If the reasonable assumption is made that the prepayment should bear some relation to the nature and amount of services to be

financed, an impact statement would be essential. Because the actual prepayment law fails to make this assumption, no impact statement is required, and the amount prepaid is the same in all cases: three times the estimated first-year property tax. Not only is the payment unrelated to the impact, but the law as passed provides an incentive to the developer to underestimate the size of the facility being constructed. A good prepayment law would require an impact statement, and would contain (a) detailed provisions for the type of information required in the statement, (b) provisions for the timing of the filing to insure that proper state and local review can be carried out, (c) penalties for noncompliance which would be more costly than the cost of prepayment, (d) methods for relating the estimated impacts and the amount prepaid, and (e) provisions for hearings and appeals from the parties involved.

2. There should be in the legislation a statement of the types of services the prepayment should finance. At a minimum, the prepayment should cover the public costs of the construction phase such as temporary school facilities, increases in protection services, and road maintenance. Financing of permanent services might also be included to insure, for example, the adequate provision of sewer and water facilities. The Montana law fails to make this specification, but does at least place a limit on the prepayment amount. Related to this point is that a prepayment law should deal with the question of how much of the prepayment should be reimbursed to the company. The law as passed provides that the entire amount be reimbursed to the company. The law as passed provides that the entire amount be reimbursed, but other methods are possible and perhaps more equitable. The issue hinges on the question of the proportion of costs local residents should be required to pay for extra public services resulting from the mining operation. If the company prepays taxes to finance impacts of a permanent nature such as road construction, sewage treatment facilities, or health care facilities, reimbursement of part or all of the prepayment might be in order. If no reimbursement is provided, local residents who benefit from the services provided will not have to pay for them. In any case, the question of reimbursement is a policy decision which should be handled carefully.

3. Finally, provisions should be included for dealing with the problem of diffused impacts. With a large industrial facility, the impacts are often spread over several municipalities, school districts, and counties. The Montana prepayment law fails to consider the problem, however, and provides only for prepayment to the county in which the facility is located. If a large number of workers settle in a town just over the county line, that town has no effective means, under this law, of receiving front-end money.

In summary, the Montana prepayment law has been criticized by Montana officials and some feel that the law will be challenged in court the first time it is applied. The points raised above not only serve as a critique of the Montana law but indicate some general questions which must be considered with any approach to reimbursing communities for the public service costs of industrial development. These points will be discussed again in a later section of this report; our attention now will be turned to other means on which Montana relies to mitigate the adverse impacts of mining and other industrial development.

The most direct state aid goes to communities experiencing the impacts of coal mining. Senate Bill 87, 1975 session, earmarks revenues from the state's

severance tax on coal to be allocated for certain purposes, among which are school equalization, county land planning, coal area highway improvement, and a local impact and education trust. The impact trust is administered by the Coal Board, which is made up of seven persons appointed by the governor, two of whom must have expertise in education and two of whom must be from "impact areas." The maximum amount of money for local impact aid will be 17.5 percent of the severance tax revenues through 1979 and 15 percent thereafter. Total revenues from the severance tax were expected to reach $66 million in the 1977 biennium. The Coal Board is directed to consider in its allocations the degree of effort by local governments to deal with impact problems, severity of the impacts, degree of local need, and availability of funds. At least one-half of the grants must go to counties, towns, and school districts experiencing a population growth of at least 10 percent since 1972.

Obviously, some of the problems mentioned in the discussion of the pre-payment law exist with regard to the impact fund. It seems necessary to have a definite mechanism for deciding whether or not an impact statement is needed, what types of information should be provided, how it should be analyzed, when it should be filed, and who should write the impact statement. The law creating the Coal Board seems to give the board sufficient latitude to establish a mechanism for answering these questions in its provision that the board should establish rules for governing its proceedings. Perhaps because the board is still in its early stages, it is unclear how the questions are being considered. At this time, local governments estimate their own impacts and submit requests to the board for aid, with no state aid to communities to insure that requests are well prepared and accurately depict local needs. Such technical assistance is not provided on a systematic basis, although aid is probably available through the extension service. A problem equally as serious is that the board has no expert staff to evaluate local requests and separate local needs from local wants. The law provides only that the board "may retain professional consultants and advisors," but this is a poor substitute for a full-time professional staff. Finally, the law directs that the board give attention to the need for local planning to help minimize adverse impacts, and directs that applicants for funds "be able to show how their requests reasonably fit into an overall plan for the orderly management of the existing or contemplated growth problems."

As in Wyoming, a major facilities siting act is viewed in Montana as a means of minimizing the adverse impacts of large energy conversion and other industrial facilities. Montana does not seem, however, to have combined mandatory local planning with the siting review process, as has been done in Wyoming. A strip mine siting act was passed in Montana in 1974, but it does not contain special provisions requiring that the applicant for a permit analyze or attempt to minimize the adverse socioeconomic impacts of the operation, although from the language of the act it would appear that such information and analysis could be required. The effect of both of the siting acts has been to keep new mining and conversion facilities in the public eye and to promote public discussion. This is the same type of beneficial effect that has been reported in Wyoming with regard to that state's siting act.

It might be concluded that while Montana has taken widely discussed steps toward alleviating the impacts of energy production, efforts there do not seem to be as coordinated as those in Wyoming, and would seem to have serious problems with regard to administration.

IMPACT FEES (AS A FORM OF FINANCIAL INCENTIVE)

Another alternative to help communities manage the impacts of mining development is the use of local "development fees" or "impact taxes" to help pay for the costs of development. Impact taxes are a new concept, and their proper use would probably require State enabling legislation. Such a tax has as its purpose the allocation of the public service costs associated with a new development to the development itself. Typically, the impact tax is discussed with respect to subdivision development and takes the form of a tax on the number of bedrooms in a new building, or the number of lots in a new subdivision, or other factors.

The impact tax is similar in concept to special assessment, a tax designed to recapture the costs of local improvements such as sewer connections. There is nothing inherent in the concept of the special assessment to prohibit its use as a recapture device for general improvements, such as a new sewage treatment plant necessitated by new development, but it has not been used for this purpose.

Exactions are imposed on developers as a condition of subdivision approval and are also similar in concept to an impact tax. The most common form is a simple dedication and/or improvement of public facilities as a condition of plot approval. This technique is almost universally accepted today as a means of recapturing the costs of both on-site and off-site improvements. The most common forms of exactions are land for parks and school buildings, roads, curbs, gutters, sidewalks, and sewer and water extensions. A more recent form of the exaction emerged from the realization by communities that in some instances money might be a more appropriate form of dedication than land or facilities. This form of exaction is more like a special assessment, but is paid in advance and has been used to recapture more general costs than the special assessment usually recaptures. Finally, dedications, improvements, and fees in lieu thereof have been imposed in recent years as conditions on permissions other than subdivision approval. Thus, variances, conditonal-use permits, rezonings, and even the simple building permit have been subjected to conditions. The advantage of this type of approach is that the costs associated with any type of development--not just primarily housing--could be imposed on that development.

It might be possible for a community faced with the boom caused by the opening of a mine to use the impact tax to finance some of the increased public service costs. Such a tax could be used to finance a wide variety of services, from roads and sewer and water facilities to services like parks and libraries for which development creates a demand but which are hard to attribute to specific developments. The great advantage of the impact tax for dealing with some of the public service impacts associated with mining is that in the absence of a state aid program, it could solve the problem of obtaining front-end money. An impact tax would also help solve the problem of mining tax revenues going to one jurisdiction while another jurisdiction absorbs a large number of the new residents and incurs increased public service costs because of the mine.

The device is being seriously considered in other parts of the country, most noticeably in Florida, which is studying state enabling legislation for such an impact tax. The argument in favor of a statewide system of local impact taxes is that it is a direct means for accomplishing the purpose of having development pay its own way. Municipalities must extend services as soon as new residents arrive, but revenues from these residents do not appear on the tax rolls for at least a year, and sometimes two years. The impact fee is also the most direct

way of having developers pay not only for direct services but for indirect services as well--police, fire, recreation, library facilities, and others. A further argument in favor of the impact tax is that property, income, and sales taxes are not designed to finance the capital outlays frequently demanded by rapid growth, but instead are needed to maintain existing service levels. Florida's proposed impact fee law would give local governments the option of imposing the impact fees or setting them aside in certain instances. The measure would exempt public housing and would require a reduced fee to the extent that capital improvements provided by the developer would lessen the financial impact on the community. Finally, the bill provides that the impact fee bear a reasonable relationship to the costs to the public created by development, and it provides guidelines for impact fee structures and technical assistance by state agencies to local governments (Boyd and Janis, 1975).

The arguments presented against the concept of the impact fee in general center on three questions: (1) Who should pay for the costs of new growth--old residents, new residents, or both? (2) Where should the funds be used? (3) How should the tax be assessed? First, it is argued that the public really saves no money under an impact fee of any sort, because the impact fee is passed on to the consumer. Further, some argue that if services were inadequate or were reaching a threshold before new development, to tax the new residents for the cost of improvements necessitated by old as well as new development is unfair. Finally, it is argued that the impact tax will hurt lower income groups because the tax will raise the price of all housing in the already tight market. As to the question of where the funds should be used, the argument is that it is unfair to charge new residents for services that benefit the entire community, and that services benefitting new residents only can be paid for through the more traditional means of exactions and special assessments. As to the question of how the tax should be assessed, it is argued that any scheme will be a bad one. A flat charge per unit will discriminate against the poor because it is regressive in nature. A progressive tax based on development value may not bear any relationship to the services required by, say, houses of different value. Finally, it is argued that a tax based on density would discourage apartment and clustered development and promote sprawling single-family development. Such development carries increased public costs in a variety of service areas.

Municipalities are nowhere near the point of recapturing through exactions the benefits they confer on a development by their very presence. Many of these benefits cannot be quantified, and this presents a justification for a general development tax rather than a specific exaction. The revenue from the impact or development tax could be used for any purpose, not necessarily just for improvements related to the development. As such, the impact tax is an intriguing concept, and it might be one incentive to communities faced with the unique impacts of mining to accept those impacts. State legislation enabling communities faced with the impacts of mining to impose a development tax on the most visible effect of the mine--new housing and related development--and to use the revenues from this tax for general purposes might be possible.

The important point to recognize about the use of impact taxes to pay for the public costs caused by residential or commercial development associated with mining is that the initial cost burden is not borne by the mine but by the new residents in the community and the companies which have built the new homes and shops. In Wyoming, Colorado, and Montana, the mining companies, through their taxes or through grants or loans to local governments, have shared the cost

burden of public service provision. An impact tax might be considered by the state legislature as one of many tools for protecting communities against the adverse impact of mining operations.

The local impact tax would work well as one part of a program for dealing with mining impacts. For example, a state impact aid fund financed from a tax on the mine might provide money only for very specific purposes--for roads and schools, for example. The local impact tax would enable a community to cover the costs related to new development but not easily quantifiable for attributable to a specific development. A local impact tax might provide some flexibility to a community in adjusting to a boom situation. The concept of the local impact tax would seem to fit well with an approach like Colorado's, in which the emphasis is on having local governments and companies try to deal with the impacts before the state steps in. The tax might be one tool to help implement this general approach.

There are two major problems with the local impact tax. First, community leaders might require some technical assistance in identifying the types of public service costs to anticipate,and in estimating at least some of the effect empirically. Second, the tax does not seem well suited to dealing with the bust cycle of mining, however, and for this reason (and others mentioned above) the impact tax cannot be relied on exclusively to deal with the community impacts of mining. Finally, enabling legislation for such a tax would probably be required. The legislation might provide some guidelines on administering the tax and on fee structures, but should not be so restrictive as to remove all flexibility from the tool, thereby removing one of its prime justifications.

ISSUE SUMMARIES

From the analyses of the actions being taken in three states to alleviate the impacts of energy development and from discussions with the state officials administering the programs, it is possible to isolate a number of key issues which must be faced in formulating a program to deal with community impacts. Although the scale of the problems may be less in Wisconsin than in the oil shale and coal-oriented states, the elements of a workable program for helping communities minimize the adverse impacts of the boom-and-bust cycle inherent in mining will be basically the same. By raising these questions now, Wisconsin will hopefully be able to develop consistent policies before too many mining operations commence. Each of the points mentioned below has been found, through its presence or absence, to be an important part of a program for aiding impacted communities.

1. All the states that have faced large-scale energy development have provided some amount of direct financial aid to impacted communities. An obvious problem revolves around the geographic distribution of impacts; a community experiencing increased school attendance and the other costs associated with new residents might not be the community in which the mine is located. The impacted community will thus not greatly benefit from increased property tax revenues from the facility and will not benefit from a distribution of a mineral tax which returns a major portion of the tax to the municipality or county in which the mine is located. The Montana prepayment law is an example of a failure to consider this factor. (The situation is further complicated in Wyoming, in which many residents in Sheridan work at the large Decker, Montana, mine.) Because of this problem, most states facing major mining operations or other forms of industrial growth have established special state-administered funds to aid communities without regard to location.

2. The "state impact fund" response can be a good means of overcoming the problem of the distribution of impacts, but such a fund must be carefully structured to avoid administrative and even legal problems. There are a number of issues to be resolved, either in the legislation establishing the fund or through rule-making procedures by those administering the fund:

a. Who decides what the impacts are? If local governments evaluate the impacts, should technical aid be provided to insure that the impacts are estimated correctly and fairly? Who should provide this aid, and who should pay for it?

b. How does the board or agency administering the fund separate local impact needs from wants? Should a technical staff be assigned to the decision-making body? An admitted problem with the Coal Board in Montana is that it is difficult to separate wants from needs in the absence of either a program of technical aid to local governments or a technical staff for the board. Colorado has approached the problem of separating needs from wants by insisting that requests for aid from communities impacted by energy facilities on the western slope submit their proposals through regional councils of government. A related question is who makes the final decision on the distribution of the impact aid--elected officials, an appointed board, or a professional staff? In Montana, it was pointed out, a great difficulty with the state's major facilities siting act is that the final decision is made by an appointed board, which has the power to ignore the detailed studies undertaken by its professional staff. It was pointed out that the final decision on siting and impact aid might be better placed in the hands of elected officials, local or state, who are accountable to the electorate.

c. Should the aid to communities be in the form of grants or loans? Should there be a distinction between those services and facilities provided to the more transient construction population and services which will benefit the entire community for years to come?

d. Will the fund be flexible enough to provide aid for those impacts which will occur during the bust cycle? A fund which must use a major portion of its money to pay for facilities construction and the more obvious services such as police and fire protection might not be able to provide aid for such services as relocation of unemployed workers, increased welfare payments, and even increased funding for social services and health programs necessitated by unemployment. The community impact laws in the three western states analyzed above do not seem to address the problem adequately. In Wisconsin, where many mines might have only a 10- to 20- year life expectancy, the problems of mine closings could be more significant than in the western states.

3. A subtle problem related to the question of the impact fund and how it is financed is that if mineral tax revenues are used to finance the fund, it will be difficult to answer a mining company's argument that it has no obligation to provide specific services because it has already "paid for" the impact. Thus Wyoming's coal tax impact fund might eventually weaken the effect of the siting act in forcing the developers of coal conversion facilities from paying directly for certain community services. In Wisconsin the Jackson County iron mine loaned money to the town of Brockway to finance a road to the mine site; had an impact fund existed, the town might have had to turn to the state for aid.

4. Many of the western states encourage dialogue and cooperation between the local governments and mining companies so that the state is not the first or

primary source of impact aid. Wyoming is working toward this end with its combination of a major facilities siting act and mandatory local planning, and Colorado is emphasizing technical aid to local governments. Both Colorado and Wyoming have reported some success in getting communities and companies to work out problems at the local level. There are several elements necessary to the success of this approach, involving both incentives and disincentives:

a. Accurate information must be obtained from the companies involved on the nature and extent of the development planned. This has been a major problem in Montana, where company plans have changed several times from the first proposal to completion of the facility. These changes not only have made planning for impacts difficult but have alienated many community residents and caused their opposition to any development. Wyoming's siting act has solved the problem with regard to large facilities by requiring a new permit for every change in plans. (Wyoming's siting act, of course, also simply requires that companies work with communities to solve common problems.) The problem of companies incorrectly estimating the impacts of their operations on communities is being approached in Colorado by insuring that an accurate data base exists, presumably including data on such crucial matters as housing supply, school capacity, and water supply. With such data available, companies would be able to forecast impacts more accurately, and communities could more easily develop their own projections.

b. If communities and mining companies are to cooperate in mitigating adverse local impacts, it is important that local governments bargain from a position of somewhat equal strength with the mining companies. This equality is fostered to a degree by making data available to local governments, but just as important is probably a program of providing local governments with professional staff time to help them use the information.

c. Another method of encouraging cooperation which has been discussed in Montana is the use of environmental laws and administrative regulations by local groups. The potential for slowing down, stopping, or at least brining to light specific information regarding a facility through litigation is great. Providing local governments with information on such procedures might be a strong incentive for companies to work directly with local governments.

d. An incentive to both local governments and companies to work together might be to tie any state impact grants to local planning efforts and to matching funds by the company involved. Colorado has an unofficial policy along these lines, presumably feeling that the developers of large facilities will not only foster much community opposition by refusing to match funds, but, in some cases, that they might have to abandon development plans in the absence of state aid to the community. Montana's law establishing the coal impact fund provides that the Coal Board consider local planning efforts in allocating funds, but it is unclear at this time how this will be applied.

WISCONSIN LEGISLATION

Some of the goals of the western legislation have already been met by existing Wisconsin statutes. The Wisconsin Environmental Policy Act (WEPA) Wis. Stat. S 1.11 (1973), requires an Environmental Impact Statement for actions affecting the quality of the human environment. An environmental impact report was prepared by the Flambeau Mining Corporation for the proposed copper mine in Rusk County. This document is an example of the type of detailed impact statement

that should be filed by mining companies. Through text, tables, figures, and appendices, much of the information sought by Wyoming, Colorado, and Montana legislation is already obtained. The developmental and production plans are outlined in considerable detail, the employment is itemized, and the impact to existing facilities is documented.

In the 1975 Wisconsin legislative session, Assembly Bill 1364 provided for a community impact fund. The bill would have established a net proceeds tax on metallic mining operations, and provided that 25% of the tax revenues would be placed in an "investment and local impact fund" to be administered by a special board attached to the Department of Revenue. Funds would be distributed to every county where metal is mined ($20,000), and to every town, village, or city where metal is mined ($10,000). Any remaining funds could be distributed to local governments, for police and fire protection, road construction and maintenance, environmental studies, studies and projects for local development, and other expenses of the mining operation. Any funds not distributed by the board would be invested, and would be available to local and county governments in the future. Clearly, if the objective is to compensate local governments for the adverse impact of mining operations, then Assembly Bill 1364 is one alternative. Other possible alternatives have been discussed, and it is appropriate to outline the basic policy choices.

Missing, of course, is a mechanism in WEPA directly encouraging or requiring mining companies to work with communities in solving impact problems, and it is to this point that much of the attention in the western states is being directed. In addition, local governments, if not provided with technical assistance to critically examine the impact statements presented to them and perhaps to develop their own estimates, are still left in a less than equal bargaining position. The Flambeau impact statement does indicate, however, that strict compliance with WEPA can insure that much of the necessary developmental and production data is available for public scrutiny.

CONCLUSIONS AND RECOMMENDATIONS

There are three basic alternatives for compensating local governments for the adverse impact of mining operations: (1) A State-administered impact fund, under which revenue is distributed according to a pre-determined formula; (2) A State-administered impact fund, under which revenue is distributed according to estimates of specific impacts on land areas; and (3) A bargaining procedure mandated by the State, with or without a State impact fund, through which mining companies negotiate directly with local governments to alleviate adverse impacts. Each alternative has its advantages and disadvantages.

A State-administered impact fund, distributing monies according to a legislatively-determined formula, has one major advantage: administrative costs are low. It is not necessary to create a staff unit to estimate impacts, and the programs would be quite simple to administer. This approach also has several major disadvantages. First, communities are not guaranteed compensation commensurate with the adverse impact they suffer. Some communities might be grossly under-compensated, and local residents would suffer a substantial real-income loss because of the mine. On the other hand, some communities would be grossly over-compensated, creating tax islands, possibly similar to the tax islands that existed under the past utility shared tax distribution formula. Finally, and perhaps most important, communities would not be forced, or encouraged, or aided

in local planning. Planning may be unpopular in some rural areas, but local land-use planning, backed by effective land-use controls, is the best way to minimize the total costs of growth. Planning and zoning can insure a more orderly local growth pattern, and help alleviate the need for a State-administered impact fund in the first place. If impact funds are distributed according to a set formula, local planning is not heavily encouraged.

A State impact fund, distributed according to specific estimates of local impact has several advantages. First, local governments are more clearly compensated for the adverse impacts that actually occur, and the danger of tax islands is considerably less. A disadvantage is that the administrative costs will not be insignificant. Estimation of public service costs of any type of development is extremely difficult, yet local officials would be forced to make such estimates possibly without any source of technical advice. Even if estimates are made locally, the State administering agency would be forced to re-estimate the impacts in order to separate local needs from local wants and insure that impact funds were in fact being used to relieve mining-induced costs for local governments. Thus, the cost and complexity of administration would be substantial. Finally, an impact fund based on specific impact estimates does little to encourage local planning. True, the process of estimating impacts may alert local officials to trouble spots, but this is likely to occur only after the impact has occurred. To minimize the adverse impact of the boom cycle, it is necessary to plan for growth and utilize land use controls to minimize the costs to the community.

The third alternative is to force mining companies and communities to negotiate over impact compensation, provided by the mining company. In addition there may, or may not, be a State-administered impact fund. This is the de facto approach taken by the western states, in combination with state administered impact funds. The major advantage is that local planning is encouraged, in advance of the time the impact begins to appear. This approach has the best possibility of actually minimizing the adverse impacts on local governments, as well as compensating for any adverse impacts which do occur. The major disadvantage is that it would almost certainly be necessary to provide technical assistance to local governments, in order to: (1) insure that adequate planning information was provided by the company and the state; (2) help local officials evaluate that information, and generally to help insure that any bargaining over impact compensation be between parties of roughly equal bargaining power. Technical assistance might come from the regional planning commission staff, located in most parts of the state, or from University Extension, with county agents in every county and back-up technical support at the State level. The Department of Local Affairs and Development is another possible source of such assistance. Bargaining equality might be enhanced by amending WEPA to include standards that require mining companies to provide information on any adverse impacts on local governments, and to negotiate with local governments to provide some compensation. Alternatively, such standards could possibly be incorporated into the Metallic Mining Reclamation Act. In either case, the State would have a strong lever (denial of a permit) to encourage or force companies and local governments to cooperate and plan for minimizing impacts. A disadvantage of this approach is that the State may be required to oversee the process, to insure that both companies and local officials are being reasonable in negotiations. Use of State-administered impact funds could be made contingent on some planning and company-provided compensation at the local level.

Several general conclusions may be stated, regardless of the alternative chosen for compensating for impacts. First, the State should encourage local land-use planning and strong land-use controls in areas identified as future

mining sites. Regardless of whether the rectification of adverse impacts is financed by the State, local government, or mining company, local planning can minimize the total amount of the adverse impact. Second, the State should establish a formal program of technical assistance to communities which might experience the economic and social impacts associated with mining. This will be necessary for good planning, and will help communities in any direct negotiations with mining companies. Finally, a State-administered impact fund, such as suggested in Assembly Bill 1364, seems to enjoy widespread support. It may be useful to integrate such a fund with a program which would insure that mining companies provide adequate information to local governments, insure that local governments are encouraged to engage in land use planning, and have adequate information and technical assistance mandate that companies provide some direct assistance to communities, and condition any state assistance on cooperative efforts between local governments and mining companies.

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