

plications are not as good as they should be, and occasionally environmental protection requires restrictive clauses; but by far the majority of applications are granted.

There is at least one example in which a producers' application for a zoning variance for quarry expansion produced 2 years of bitter fighting and alleged illegal actions by townspeople. Eventually, DEC interceded, proper legal action was taken, and permits were issued.

DEC's simultaneous support for mining and for environmental protection is a goal that is not yet achieved on a statewide basis, but movement in that direction is under way. In practice, the MLRL is already providing some advocacy for New York's mining industry. DEC regional mining specialists understand industry needs and impacts and constantly must look beyond the emotionalism of local opposition. They often meet with town officials, discuss various technical and procedural aspects with those officials, and will occasionally attend public hearings to discuss the application of the mining law.

SUMMARY

The MLRL has benefited both the state's mining and environmental interests in a number of ways. It provides a statewide, rational framework for regulating mining to supply minerals needed for New York State's development while it also protects the

state's environment. Most producers have received even-handed and intelligent assistance from the professionals who administer the law in the state's nine regions and who understand the special conditions in their region.

Still, the law is not yet problem free. Some people still call the MLRL a poor law, citing problems with uneven administration, especially during the early years of its administration. Uncooperative or even antagonistic state officials have been encountered. In fact one producer took DEC to court on a point of interpretation and finally won the right to mine, after the case went through two lower courts. Further, some sophisticated special interest groups have used MLRL rules and regulations to their advantage to forestall applications.

Although it may not be the final answer, everyone agrees that the MLRL is a good place to start. Towns generally rely on the state's knowledge of mining and reclamation procedures and producers appear to be in accord on the benefits of reclamation--benefits that accrue to both the community and to themselves.

Generally, implementation of New York State's MLRL has placed order into an otherwise chaotic condition. With increasing experience and with greater understanding between industry leaders and environmentalists, the ability to meet community needs for basic construction materials in an atmosphere of government and public cooperation is coming closer to reality.

Positive Impact of Urbanization on the Aggregate Industry

DON REINING

ABSTRACT

The planning and environmental control process, as it relates to mining in California, was triggered essentially by a 1967 amendment to California's General Code, which added "natural resources" to those things that must be considered in land use planning. Then in 1973 the California Division of Mines and Geology published a report that showed (a) the need for mineral resources, (b) how mineral resources were being needlessly lost to the people of the state, and (c) what the cost to the citizens of California was likely to be by the year 2000. The state has officially acknowledged that management of mineral resources is a critical part of the planning process. California currently has laws in which quantification of mineral resources is under the California Division of Mines and Geology, land reclamation is administered under the Surface Mining and Reclamation Act, and opening new deposits requires environmental impact reports that are administered under the California Environmental Quality Act. Develop-

ment of laws relating to environmental and economic impacts of the mineral industry in California was accomplished in close cooperation with the state's mineral aggregate producing associations and with the approval of the Sierra Club. Some specific efforts of the Southern California Rock Products Association are also noted in this paper. This body of laws has proved beneficial to some mineral producers. However, the process of evaluating requests for approval to mine has been slow, often with a 10-year period between the first submittal of a proposal and actual mining. This prolonged process is costly and tends to eliminate the small mineral producers that dominated the aggregate industry in the past.

During the past two decades the Southern California Rock Products Association has been involved with legislation that vitally affects the mineral industry and the people of the state of California. The long and complex interplay between California's legislature, some of its bureaucracies, conservation groups, and the mineral industry has resulted in

many compromises. There is a better understanding now among the contributing groups of each other's importance, perspectives, and requirements. Legislation resulting from the interplay of forces is innovative and in many ways the first of its kind. A few highlights of the history of these laws and some of the practical results of the legislation are summarized herein.

LEGISLATIVE HISTORY

In 1967 California's General Code was amended to include the words "natural resources" among considerations in land use planning. Cities and counties were required by law, for the first time, to recognize natural resources in their general plan or statement of development policies and were also required to include a diagram(s) and text setting forth objectives, principles, standards, and plan proposals with respect to natural resources. Before this, cities and counties had been planning for housing, business, industry, agriculture, and so forth, but not for their natural resources. The cart had been before the horse.

LOSS OF MINERAL RESOURCES

In 1973 the California Division of Mines and Geology (CDMG) republished a landmark document that gave credence to mineral resources as a vital link in the state's future development (1). According to the authors, the loss of mineral resources in California due to urbanization between 1970 and 2000 was estimated to total \$17 billion if practices at that time were continued. Mineral resources under greatest urbanization pressure were found to be construction materials, especially sand, gravel, and crushed stone. In the CDMG report the estimated losses were based largely on the added costs: the cost to the public of increased transportation, the cost of relocating mining operations farther from markets, and the cost involved in use of lower grade deposits that require more processing. Some mineral deposits being threatened by urbanization were shown to be unique and not replaceable. However, the report did not include in the \$17 billion figure the environmental costs of using mineral deposits farther from markets, such as more vehicles required, more energy used, resultant increased air pollution, and increased road maintenance.

It was concluded by Alfors et al. (1) that

Mining operations required to supply urban needs should be located as close to markets as suitable deposits permit, and appropriate land use designations should be provided. Unique mineral deposits, especially, should be protected from urbanization.

Deposits of all minerals on earth that are of economic size and quality constitute only a small fraction of 1 percent of the earth's crust, making them one of the rarest, and most valuable, parts of the environment. In their report, the CDMG urged local governments to protect critical mineral resources, access thereto, and the mining thereof within their jurisdictions by special zoning, with buffer zones around them as necessary. In turn, the division urged that mine operators be required to conduct operations as compatibly as practicable with their surroundings and be required to rehabilitate depleted mined lands for subsequent beneficial use such as parks, open space, or other forms of urban development.

THE SURFACE MINING AND RECLAMATION ACT AND RELATED LAWS

In 1975, to solve the problem of dwindling mineral resources and in part to head off federally imposed regulations, the Surface Mining and Reclamation Act (SMARA) was passed by the California State Legislature and signed by the Governor. The bill (S 756) had the approval of the mineral aggregate trade associations and the Sierra Club. SMARA requires the state geologist to classify, according to mineral content, urban and urbanizing areas in the state. The Act further requires reclaiming mined land to a usable condition in accordance with adopted state policy and local ordinances. The California Environmental Quality Act (CEQA), along with SMARA, has imposed additional environmental regulations on the aggregate industry.

The legislation opened new horizons for surface mining operations and reclamation of mined lands in California. The Southern California Rock Products Association supported the passage of Senate Bill 756 because it made sense environmentally, and it was good for business and for society in general.

SMARA provides for mineral resource classification in the state's urbanized areas. The state geologist is instructed to categorize mineral resource availability without regard for current land use activities. As a result, construction aggregate maps are prepared to date for six "production-consumption regions" in the Los Angeles metropolitan region and environs, and the four regions in the San Francisco Bay Area. The maps show the distribution of usable materials based on current technical specifications of physical and chemical characteristics.

It is important to note that the majority of the information on which these classifications are based is currently available, and CDMG staff has garnered this information, interpreted it, and put it into the classification format. This makes the process cost effective and distinguishes it from mineral exploration by the industries, which is of a more intensive and expensive nature appropriate to the private sector.

Where construction aggregate resources exist, unencumbered by incompatible land uses, the state geologist establishes mineral resource sectors and estimates the volume of that aggregate material. The state geologist estimates the volume of construction aggregate materials that will be used in each production-consumption area by decade during the next 50 years. These newly assembled maps provide local governments land use information with new insights regarding both the occurrence of usable construction aggregate resources and the extent of geographic locations within their jurisdiction that may satisfy the required needs during the next 50 years. Such insights allow enlightened and prudent management of land uses and mineral resources. The provision of the classification information by the California State Geological Survey establishes the information with objectivity, because this scientific group has no regulatory responsibilities or any vested interests of any type.

Eighty-six local governments in California now have surface mining and reclamation ordinances. In most cases these agencies have recognized that extraction of minerals is essential to the economic well-being of their areas. They note that minerals are important to many industries, including construction, transportation, and chemical processing. The use of many mineral deposits is enhanced by their close proximity to urban areas. The nonrenewable characteristic of mineral deposits necessitates the careful and efficient development of mineral

resources to prevent the unnecessary loss of these deposits due to uncontrolled urbanization.

Whereas the industry was previously at odds with planners, planners are now more likely to see mining as a transitional land use that is critical to the needs of the general public and that requires their sympathetic attention. To ensure implementation of a mining and reclamation plan, there is a coordinated effort between the concerned government agencies and the industrial association.

Designation of mineral resource deposits, including construction aggregates, constitutes a policy development process accorded to the state Mining and Geology Board by SMARA. The board is authorized to designate deposits exceeding a specific threshold value as "deposits of regional significance." Further, the statute requires that the "lead agency" (land use regulatory jurisdiction of local government) inform the Mining and Geology Board on how they are using that designation information in their land use planning decisions. Every community shall, in accordance with state policy, establish mineral resource management policies to be incorporated into its general plan. The Mining and Geology Board also has the opportunity to comment on any planning or regulatory decisions made by local government. As the Mining and Geology Board has carried out the designation process, they have held public hearings on each set of impending designation decisions for specific production-consumption areas and an environmental impact report (EIR) has been prepared. The designation process provides an opportunity for dialogue between the state Mining and Geology Board and local government regarding deposits designated to be of regional significance.

The major reason why the sand and gravel industry supported passage of SMARA was because of the classification and designation of mineral lands. Pursuant to the requirements of the Act, the state Mining and Geology Board adopted the "Guidelines for Classification and Designation of Mineral Lands" following a June 1978 public hearing.

In accordance with their responsibility under SMARA, the CDMG provides technical advice on reclamation planning to both local government land use regulators and to the mining industry. For example, CDMG offers technical commentary on plans submitted for staff review, it develops general information publications, and it conducts workshops on reclamation. CDMG is now preparing a major publication on reclamation in California and is organizing a promising series of workshops. CDMG's influence in the area of constructive advice for producers and users of aggregates should continue to grow.

UNIQUE NATURE OF SMARA'S RECLAMATION AND MINERAL RESOURCE CONSERVATION PROGRAM

SMARA provides information on mineral resource availability and reclamation at the state level without exerting a true state regulatory role. In most states that have a reclamation act, however, the state administers the reclamation process as a regulatory body. The state Mining and Geology Board establishes policy on reclamation regulations that is then implemented by the local governments, a desirable arrangement that allows the small reclamation staff at the state level to provide information rather than administering regulations. The key to its success, however, is the assurance that appropriate local governments are enforcing the regulatory responsibilities in an acceptable manner. This is generally the case throughout California.

Thus the classification-designation process provides a significant opportunity for improved land

use decisions based on knowledge by local governments regarding the mineral resource potential within their jurisdictions, and the significance of that mineral potential in satisfying the foreseeable future needs within local production-consumption areas. The reclamation element of SMARA also provides an opportunity for information transfer without obligating the state to administer the reclamation regulatory process.

POTENTIAL IMPACT OF CLASSIFICATION AND DESIGNATION IN CALIFORNIA

As the SMARA programs continue to function, local governments will be able to make more sophisticated and rational decisions regarding land use permits because data will be available on future needs for construction aggregate materials, as well as on the broader implications of their decisions. This in turn should lead to more sustained availability of important aggregate resources in areas where intense land use competition is expected during the coming decades.

Considering reclamation, shorter lag times between the development of new and desirable technologies and their applications in California should result from CDMG's information activities under the policy guidance of the state Mining and Geology Board.

CASE HISTORIES

Case History 1

In January 1981, when the 900-acre residential "Horse Thief Canyon Plan" was being processed before the Riverside County Planning Commission, the California Department of Conservation requested that the developer prove in his EIR that the development would not threaten the potential extraction of sand and gravel in that immediate adjacent area. By law the developer is now required to discuss how his development will relate to the community's mineral resource management policies if the minerals are in the adjacent area. Sand and gravel will be produced from the area once economic conditions justify it.

Case History 2: Reclamation with Inert Materials

A new mobile home park with 150 units on 16 acres of reclaimed land now exists in Orange, California, immediately adjacent to the Conrock Company, a large sand and gravel producer. The development is compatible with the production plant because, during the developer's permitting process, the aggregate company protected itself from future complaints under provisions of the CEQA.

At the public hearings held by the city of Orange Planning Commission to approve the developer's EIR, Conrock challenged the developer's EIR contention that their plant would have no adverse impact on the proposed trailer park. The commission agreed with Conrock, because the closest units would be within 450 ft of the plant, and prospective residents could be adversely affected by the noise from the plant.

According to the commission's orders, the developer modified the EIR with noise-mitigation measures. The developer subsequently spent more than \$85,000 to install noise-abatement panels on Conrock Company's plant, which lowered the noise to an acceptable level inside the park's boundaries.

The city's approval was also conditioned on the developer placing a thick cap of compacted fill over

the entire site, because the property had been excavated for sand and gravel and subsequently re-filled with silt from the production process by ponding.

The most convenient access to the site for the trucks hauling in the required cap material was to cross property owned by Conrock Company. In exchange for allowing the developer to cross Conrock property, the developer agreed that each resident who moved into the park would agree in writing that they were aware of the existence of the sand and gravel production plant; that they accepted the fact that there may be noise associated with the operation of the plant during the legal operating hours; and that they waived their right to file any complaints regarding plant noise.

In essence, the sand and gravel plant has protection to continue operation because its product is needed on a regional basis. Assurance that the plant will continue in operation was brought about by an alert industry representative who worked with the developer and the planning commission.

The property is now productive piece of ground on which 150 families make their home. Probably few residents even know that the land on which their trailers are located was once a sand and gravel pit that had been excavated to a depth of 90 ft.

In prior years the owners of the mobile homes would probably have stormed city hall shortly after they moved into the development. Land limit restrictions, air pollution, noise level complaints, and other problems would have forced the sand and gravel company to move to a fringe area where they would no longer get complaints from their neighbors, and where added transportation would add significant amounts of money to aggregate costs.

Case History 3: Government Helps Sand and Gravel Industry

California's Coastal Commission Act requires the Coastal Commission to approve the general plans of cities and counties within its jurisdiction. A large sand and gravel producer applied to the city of San Diego for a conditional use permit to mine its sand and gravel property in the city's Border Highlands. The city denied the permit, partly because their general plan showed a proposed expansion by the state of an adjacent small park.

However, before the Coastal Commission's public hearing, held to certify the city's general plan, company officials found that a changing financial situation prohibited the state from acquiring the property for park expansion. The company obtained a letter to that effect from the State Park Commission, which it submitted to the commission at the hearing. On receipt of the letter, the Coastal Commission agreed to certify all of the city's general plan, except the area covering the Border Highlands. The city was directed to restudy the area and to submit a revised plan for the Border Highlands showing a designation on the property that would allow for excavation of the sand and gravel deposit. The commission even contributed \$17,000 to the study it ordered (2). The study was subsequently completed and the city revised its general plan for the Border Highlands area, acknowledging the existence of the deposit and indicating the future use of the property for sand and gravel extraction. The revised plan was then submitted to the Coastal Commission, which certified the revision.

Currently Fenton Material Company is mining, and Conrock Company should be able to mine their reserves in the future when needed.

Case History 4: Same Plot of Land Used Four Different Ways

The hypothetical situation that follows illustrates the potential value of sequential land use.

In the Los Angeles area in 1978 you could purchase 40 acres of land suitable for sand and gravel mining for \$400,000. If the market was good you could expect the sand and gravel company to whom you leased the property to dig the 40 acres in 9 years.

Nine years later, when 9,375,000 tons of aggregates would have been sold, your \$0.15 per ton royalty would have provided an income of \$1,406,000. In 1987 your 40 acres would then be depleted. You could then lease your land to a reclamation company. In 8 years the empty hole will be filled with class II material that permits inert and decomposable waste, such as household refuse. At \$0.25 per cubic yard, your royalty rate would provide an income of \$1,526,500. Now your 40 acres have been reclaimed and Mother Nature could start working for you.

For the next 15 years you could then be collecting methane gas after your wells have been established and a compressor plant has been built. You may find a company that would dig the well, install the scrubber equipment, and sell the gas at no cost to you. They would pay an estimated income to you in the amount of \$7,000,000 over the next 15 years. Not bad for an original investment of \$400,000.

Thus the income derived from sand and gravel mining, sanitary land fill, and methane gas extraction is as follows:

<u>Year</u>	<u>Land Use</u>	<u>Income (\$)</u>
9	Mining	1,400,000
8	Landfill	1,500,000
15	Gas recovery	7,000,000
32	Reclaimed land	9,900,000

Don't forget, you would still own the 40 acres. Why not build a golf course on your property or a drive-in theater?

Every step of the way we pay money and we complain, but we ultimately comply with the CEQA and other environmental regulations. We prepare EIRs. We have a dozen different agencies that must approve our environmental report.

Ten years ago no producers had gone through this sequential use exercise; but today reclamation operations are beginning to reap the benefits of sound business practices that sometimes are imposed on the sand and gravel industry by government agencies and the general public. In the long run the industry has survived. It has made a profit for its stockholders and paid its taxes, although California producers often count on a 7- to 10-year battle with government agencies to get permits.

SUMMARY

California's SMARA is the first legislation in the United States that establishes a statewide mineral resource policy governing mining activities that recognizes regional resource needs and retains local autonomies.

The Southern California Rock Products Association supported the proposed legislation, and through its efforts the SMARA was passed.

Local planning and zoning processes, which are so critical to the industry, have been significantly improved with implementation of SMARA. Recognition of the importance of the mining industry is now being fostered by the state Mining and Geology Board and the CDMG. Authority is being established by documented reports prepared for the designation

process. Credibility of the industry is further strengthened with the partnership between local and state governments.

SMARA directs the state Mining and Geology Board, in cooperation with CDMG, to classify areas previously identified by the Office of Planning and Research as lying in the path of urbanization with respect to the nature of mineral deposits in such areas. Such areas of information shall be included in the general plan of the community within 12 months, in accordance with state policy. Communities are required to establish mineral resource management policies to be incorporated into their general plans.

Before permitting a use that would threaten the potential to extract minerals in an area classified or designated, the community permitting agency must show cause for an evaluation of the area to be prepared in order to ascertain the significance of the mineral deposits located therein.

In accordance with a time schedule, and based on guidelines adopted by the board, the state geologist shall classify, on the basis solely of geologic factors and without regard to existing land use and land ownership, the areas identified by the Office of Planning and Research and any area for which classification has been requested by a petition that has been accepted by the board.

Within 12 months of receiving the mineral information after the land has been designated as an area of statewide or regional significance within its jurisdiction, each local land use agency, in accordance with state policy, shall establish mineral resource management policies to be incorporated into its general plan.

California has made considerable progress since

Senate Bill 1401 was signed by the Governor on September 2, 1967. This Act requires that the land use element of a city or county general plan designate, among other things, the proposed general distribution and general location and extent of the uses of the land for natural resources. The bill further provides that the general plan for city or county development may include as a part of a conservation element the location, quantity, and quality of the rock, sand, and gravel resources.

In California obstacles to development of aggregate deposits have been reduced substantially during the past 20 years, thanks to the legislature and the administrative assistance of California's state government. Most aggregate producers believe that the law has been beneficial, and planners appear to better understand the need for aggregate production in terms of its economic impact on the people of California.

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