

Since 1954 sand and gravel has been the largest of the mining industries in terms of tons produced. That tonnage is now very close to 1 billion tons a year, of which about 75 percent is produced by commercial operations.

These construction aggregates are low-value heavy-loading commodities which must be produced as near as possible to the sites of major construction activity. It is vital to the economics of our expanding urban areas and the construction of the many required structural facilities of these areas that hauling costs be kept low.

This has resulted over the years in the concentration of sources of production in and near urban areas. This has further resulted, particularly since World War II, in the preemption of sand- and gravel-bearing reserve lands by other uses and in widespread restrictions by local authorities which preclude the mining of reserve lands even though they may have been owned for years by producers.

The New York City, Los Angeles, Detroit, Denver, and Washington metropolitan areas are among some of the most critical areas in which preemption and restrictions are now or soon will be causing substantial increases in construction costs.

In 1955 a study by the National Sand & Gravel Association indicated that over half of the operations in a significant sample were carried on in areas subject to regulation by zoning authorities and we have reason to believe that this situation may now apply to two-thirds or more of all operations.

Some of the leading member companies of our association have carried on reclamation programs since the early 1920's. A brochure on one of the finest of such endeavors by a leading producer is among the publications which we have submitted and also sent to your offices and which you have at hand there now.

In 1955 the association, recognizing the growing seriousness of the situation, embarked on a reclamation research program, which still continues to convince both our industry and the land-planning profession that the public interest requires:

1. The orderly, economic, and full development of sand and gravel resources, and
2. The restoration of worked-out lands to afteruses amenable and suitable to the surrounding environment.

We have promoted, we believe with significant success, the multiple-use concept of land planning—development of the mineral values followed by return of the land to uses such as recreation, residential, institutional, industrial, and commercial sites, and waste disposal sites.

In connection with waste disposal, it is now widely recognized that this is becoming a critical element of environmental control. It is possible to get three uses out of certain sand and gravel operations—extraction, filling with solid waste materials, and building sites or recreation sites.

One of the major efforts of the program of the National Sand & Gravel Association has been the sponsorship of research at the graduate level by the Department of Landscape Architecture of the University of Illinois, under the very able chairmanship of Prof. William G. Carnes.

The first three completed research reports are part of the material which we have submitted to your committee. One of them, although