

Sand and Gravel Resource Study
of
Josephine County

Sand, gravel and other minerals are not ubiquitous. Nor can they logically be considered renewable resources. Mineral deposits of sufficient quality to satisfy current and future consumption demands occur in finite and exhaustible quantities. Population increases bring about increases in construction activity which, in turn, place additional demands on our mineral resources. Ironically, the resultant development often occurs in areas that contain significant mineral deposits. Consequently, areas underlain by sand and gravel are being depleted as they are mined and rendered unavailable by urban growth. If this trend continues, many of the county's mineral deposits will be seriously depleted before the year 2000---less than 30 years away.

The Oregon State Legislature has recently recognized the importance of a conservation-oriented approach to the utilization of our mineral resources. ORS 215.055 directs counties to take into consideration lands that are, can or should be utilized for sources of processing of mineral aggregates in the adoption of any land use zoning ordinance, and ORS 517.750 to 517.900 provides for mandatory reclamation of mined lands.

The reclamation laws are currently in effect and being enforced by the Department of Geology and Mineral Industries. However, due to the lack of a data source on which to base land-use decisions concerning

mineral extraction, most counties have been unable to comply with ORS 215.055. This Department is proposing a comprehensive study be made of the geology and mineral resources of Josephine County; thus providing such a data base.

Work Program

This project will inventory and summarize sand and gravel resources along the Rogue, Applegate, and Illinois Rivers and their tributaries in Josephine County. Resources will be estimated in the Jump-off Joe Creek-Louse Creek, (Merlin) Basin, along Grave Creek, and the Coyote Creek-Wolf Creek area adjacent to small population centers in the northern part of the County as well as the broad alluvial areas in the Illinois Valley to the south. Potential reserves will be calculated for the various areas and where adequate information can be obtained on depth and quality, individual deposits will be described in detail.

The project would be carried out as follows:

Step I. Preliminary Investigation

Obtain needed base maps and aerial photo coverage for use in the study. Identify areas of principal gravel deposits. Determine the extent of the industry by locating all operating pits in the county. Assemble information on past and present production of sand and gravel. Identify areas presently zoned for mining as well as areas where zoning, development, or governmental restrictions preclude use of the resource.

Step II. Field Survey

Make on-site inspections of all areas to determine extent, quality, average thickness of deposits and depth of overburden. Determine present

use of land, other likely uses, problems of reclamation, environmental impact, etc. Seismic and well log data will be utilized to determine thickness of overburden and depth to bedrock.

Bedrock geology of the adjacent areas should also be mapped where information can be readily obtained to improve the details of existing smaller scale geologic maps.

Step III. Data Reduction and Analysis

Forecast the sand and gravel needs of the County by areas. Include data on projected growth. Consult with County Planning Division on this and other available sources of information.

Step IV Preparation of Final Report

Prepare maps, report, tables and figures for publication. Include recommendations as to areas most likely for future development and outline best future source areas. Project production life expectancy for areas now being mined.

PROPOSED PROJECT OUTLINE

Introduction

- A. Purpose
- B. Method of study
- C. Sources of information - previous work
- D. Location and extent of area
- E. Climate and vegetation

Population Growth and Gravel Needs

- A. Population studies and growth trends
- B. Relationship of population to gravel needs
- C. Urban development versus gravel reserves

Geology of the Rogue, Applegate and Illinois Rivers and their Tributaries

- A. Topography
- B. Stratigraphic summary
- C. Bedrock units
 - 1.
 - 2.
 - 3. etc.
- D. Gravel units
 - 1. Bench gravel
 - 2. Terrace gravel
 - 3. Floodplain gravel
 - 4. Channel and bar gravel

Gravel Resources in Josephine County

- A. Summary of gravel reserves
 - 1. Rogue River gravels
 - 2. Applegate River gravels

3. Illinois River gravels
 4. Other gravel deposits
- B. Estimated gravel requirements for the future
- C. Summary and conclusions

Bibliography

Appendix

(laboratory test, tables and graphs)

ESTIMATED SCHEDULE OF COSTS

A.	Field mapping and inventory of existing operations	(6 weeks)	\$ 3,600
B.	Field analysis	(4 weeks)	2,400
	1. Compilation of base map data		
	2. Mineral resource review		
C.	Report writing and editing	(5 weeks)	3,000
D.	Final editing, typing and preparation of illustrations	(4 weeks)	800
E.	Cartographic drafting	(4 weeks)	1,500
F.	Transportation and incidental expenses		500
G.	Map supplies and equipment		<u>500</u>
	TOTAL ESTIMATED COST		\$12,300

P R O S P E C T U S

GEOLOGY AND MINERAL RESOURCES OF JOSEPHINE COUNTY, OREGON

The Department proposes to undertake a geological and mineral resource study of Josephine County. It has been suggested that such a study should be divided into two phases: (1) construction materials resources inventory, primarily sand and gravel deposits, and (2) a comprehensive survey covering all the known minerals within the county. The reason for the two-phase approach would be to provide information on sand and gravel as soon as possible for the County Planning Commission. The second phase would be produced later so that the county would then have an up-to-date inventory of all of its mineral resources. The memorandum covering phase one, as presented here, contains specific information on details of the study and estimated costs. Phase two is less specific, but the Department can supply more details upon request.

GEOLOGY AND MINERAL RESOURCES OF JOSEPHINE COUNTY

Project Description

The purpose of this project would be to develop concise data on the economic minerals of the County in a form which can be submitted to potential users or developers of the County's mineral resources. To this end the Department will survey the mineral resources of Josephine County, incorporating all available information on the minerals in the County, detailing location of mineralized prospects, including production history, if any, as well as quality and quantity of known ore bodies. The proposed work will take into consideration earlier studies by geologists and engineers, and available records of mines and mining operations.

Work Program

The primary objective of the study will be to provide the best available information on the mineral resources, with special emphasis on the metallic deposits, in a form that will be most useful to all potential developers. Such would include a written report and geologic maps showing the general geology of the county. Some larger scale, localized maps of the more important mineral localities would also be included.

The work program would consist of the collection and collation of data from aerial photographs, geologic and topographic maps, industrial records, local governmental units, and other state and Federal agencies. The compilation of data will be augmented by some field studies with the intent

of standardizing the results of previous work and extending the analysis into areas where information is limited or lacking.

Proposed Project Outline

Introduction

Geography

Geology

Mining Activity

Metallic Mineral Resources

Industrial Minerals and Rocks

Bibliography

Glossary

Estimated Project Cost: \$12,500