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An aggregate shortage looming for San Diego and California

By **ERIK PISOR**, The Daily Transcript
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Construction sand and gravel, also known as aggregate, are the leading non-fuel mineral commodities produced in California.

However, as the need for this material continues to increase, the amount of permitted aggregate mining is decreasing, setting the table for a future aggregate shortage.

Reasons for the upcoming shortage and the solutions to preventing it were discussed by Steve Bledsoe, president of the California Construction and Industrial Materials Association, who spoke during an American Concrete Institute of San Diego's meeting this past week.

According to Bledsoe an increase in statewide population, a rise in demand for aggregates and the inability of government agencies to permit enough aggregate mining are the causes of what could become a material shortage.

From 2001 to 2006, the statewide demand for aggregate has increased from 12 billion tons to 13.5 billion tons, while the amount of mining has decreased from 6.8 billion tons to 4.3 billion, according to a 2007 Department of Conservation Geological Survey report.

Permitted aggregate resources are aggregate deposits that have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material.

The time it takes to attain necessary permits for mining has lengthened significantly, from four to five years and now to anywhere from 11 to 18 years, Bledsoe said. County, city and statewide planners often have competing interests and have a tendency to treat the likelihood of a shortage as an after thought, he added.

"There's a lot of pressure on local agencies not to permit these resources because of community resistance," Bledsoe said, adding many residents now live much closer to aggregate mining because of housing development.

Looking ahead, the greatest projected future need for aggregate exists in the South San Francisco Bay, San Gabriel Valley, Temescal Valley-Orange County, western San Diego County and San Bernardino regions, as each is expected to require more than a billion tons of aggregate by the end of 2055, according to the Department of Conservation report.

Except for Yuba City-Marysville near Sacramento, all of the aggregate study areas, 31 regions, have less permitted aggregate resources than they are projected to need for the next 50 years.

In San Diego, where sand mining is nonexistent and several aggregate facilities are slated to close in the near future, there is a 50-year demand of 1.164 billion tons of aggregate.

However there are only 198 million tons of permitted reserves, equal to 17 percent of the total 50-year demand.

From 2001 to 2006 there was a 28 percent decrease in the amount of permitted aggregate resources in the county. While the amount of permitted resources has decreased, the 50-year demand for aggregate has increased from 1 billion tons in 2001 to 1.16 billion in 2006, a 6 percent rise.

This lack of permitted resources means a large amount of aggregate must be imported from nearby counties, which means those regions' supply of materials will decrease faster than anticipated, as these areas are also

not permitting enough resources.

Aggregate from the San Gabriel Valley production district is hauled as far south as northern San Diego County. Currently San Gabriel has 32 percent of the permitted reserves needed for the next 50 years.

Northern San Diego County also imports aggregate from the San Bernardino production area and the Temescal Valley.

Currently San Bernardino has 24 percent of permitted reserves need to meet the 50-year demand and Temescal Valley has 32 percent.

Temescal has less than 16 years of permitted reserves remaining, assuming no export to San Diego.

Aggregate used in downtown San Diego, is often hauled from southwestern Imperial County, a distance of about 90 miles, while sand comes to the region via barge from Mexico.

According to the report, the highest-priced aggregate in the state is in the San Diego area, where PCC-grade sand is in very short supply, causing prices to range from \$20-\$22 per ton.

Coarse PCC-grade aggregate is more abundant in the area and averages about \$15 per ton.

The reason for these high prices is mainly because of transportation costs associated with the importation of these materials.

According to Bledsoe, the price of aggregates doubles in cost for every 30 miles transported.

For example, to construct one mile of six-lane interstate highway, about 113,505 tons of aggregate are required, according to the report.

Transporting this amount of aggregate 30 miles adds \$510,000 to the base cost of the material at the mine.

In major metropolitan areas, this rate is often greater because of heavy traffic that increases the haul time.

To avoid these increased costs and an aggregate shortage statewide, Bledsoe said options such as using substitute or recycled materials are possible.

However, the real solution involves the construction industry influencing lead agencies to permit additional mining resources.

"The only option we have is to look to local permitting," he said.

The report cited another possible solution, the mining of non-permitted aggregate resources.

These resources are deposits that may meet specifications for construction aggregate, are recoverable with existing technology, have no land overlying them that is incompatible with mining, and currently are not permitted for mining.

Currently, an estimated 74 billion tons of non-permitted construction aggregate resources exist within the state.

While this number is large, it is unlikely that all of these resources will ever be mined because of social, environmental or economic factors.

"In spite of such possible constraints, non-permitted aggregate resources are the most likely future sources of construction aggregate potentially available to meet California's continuing demand," the report stated.