

OFFICE OF THE INDEPENDENT BUDGET ANALYST REPORT

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Land Use & Housing Committee Date: September 19, 2007

Item Number: N/A – Response to Land Use & Housing Committee Request

Subject: Removal of sediment from City reservoirs as an aggregate resource

OVERVIEW

At the September 19, 2007 Land Use & Housing (LU&H) Committee meeting, Warren Coalson, President of EnviroMINE Inc., gave an informational presentation on construction aggregate resources in the county of San Diego. Based on this presentation the LU&H Committee requested that the Independent Budget Analyst (IBA) review the issue of removing sediment from reservoirs as an aggregate resource and analyze how this proposal can increase reservoir capacity. In addition, the committee requested that the IBA review the process of designating resources in the City's General Plan.

Construction aggregate is essential to the needs of modern society, providing material for the construction and maintenance of roadways, dams, canals, buildings and other parts of California's infrastructure. Aggregate is also used in the construction of homes, schools, hospitals and shopping centers. Based on information provided by Warren Coalson and a 1996 report prepared by the California Department of Conservation – Division of Mines and Geology (DMG), demand will continue to grow while active production of aggregate will decrease in the future. The 1996 DMG report projected permitted aggregate reserves of 352 million tons in western San Diego County which would last until the year 2016 at the per capita consumption rate of 5.4 tons. However, this reserve estimate could be negatively impacted by unforeseen events such as disaster reconstruction in the wake of an earthquake.

Aggregate is a major component of concrete. It is produced from naturally occurring materials such as sand, gravel, and crushed stone.

Another area of concern is the decrease in permitted aggregate resources. 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 the mining of aggregate material. Due to the lack

of permitted aggregate resources in San Diego County, additional materials are required to be imported from other areas. In some cases aggregate is hauled from southwestern Imperial County into downtown San Diego, a distance of about 90 miles, or shipped by barge from Mexico. Due to the expense of transportation, the cost of aggregate is higher in the San Diego region than other California regions. The increased cost of aggregate has a cascade effect on construction costs in the San Diego region which is ultimately passed on to the consumer. The following chart details the costs of aggregate in different regions of California:

Region	Cost Per Ton
San Diego	\$20 - \$22
Northern San Francisco Bay	\$16
South San Francisco Bay	\$16
Los Angeles	\$13 - \$16
Central Valley (Tulare and Fresno Counties)	\$14 - \$18
Sacramento	\$10 - \$11
Palmdale	\$10
Ventura County	\$9
Yuba City – Marysville	\$7 - \$8

Source: Department of Conservation – California Geological Survey

Solutions to increasing the supply of aggregate in the San Diego Region are limited due to the lack of areas available for mining and the extensive permitting required once areas have been identified. However, during his September 19, 2007 presentation, Warren Coalson provided a few suggestions on how the San Diego region could increase the amount of construction aggregate. These suggestions include the removal of sediment from the City’s reservoirs, and the designation of resource areas in the City’s General Plan.

FISCAL/POLICY DISCUSSION

Removing Sediment from reservoirs as an aggregate resource

The possible benefits of the removal of sediment in reservoirs include the restoration of lost storage area which could reduce the need to import water and, in some cases, the receipt of royalty payments from the sale of aggregate. The process of sediment removal involves the use of a dredger placed on a barge or based on the shoreline. Before the process of dredging can begin multiple studies are required to ensure that the impact on the reservoir is minimal. In many cases local, state, and federal permits must be obtained before dredging can begin. The sediment removal process can take anywhere from 2 to 10 years from the initial planning stage to actual dredging.

In preparation of this report the IBA contacted multiple water agencies to determine if they have or currently are undergoing a sediment removal process from their reservoirs and then selling the dredged materials as aggregate. Currently, most water agencies do not participate in a sediment removal program in reservoirs that store drinking water due to the extensive permitting and the length of time required to complete the project. However, the IBA was able to identify two agencies that are either in the process or planning to remove sediment and then sell the materials. An overview of each of those projects is provided below:

Vista Irrigation District – Lake Henshaw Maintenance – Dredging Of Silt Buildup from Lake Bottom

In November of 2005, the Vista Irrigation District Board of Directors approved in concept a proposed maintenance project at Lake Henshaw that included the removal of silt and sand. A private company, Superior Ready Mix, was contracted to take the lead on the project. Currently, Superior Ready Mix is in the process of preparing environmental documentation. The estimated time to obtain the necessary permits and dredging of the reservoir is projected to take 4-5 years to complete. Final terms of the agreement between Superior Ready Mix and the Vista Irrigation District have not been worked out. However, the District is expecting to receive compensation for each yard of sand recovered.

Irvine Water & Serrano Water Districts – Desilting of Irvine Lake Project

In 1998 the Irvine Water & Serrano Water Districts contracted with CalMAT Co., to remove silt from Irvine Lake. The permitting process was extensive and took five years to complete before dredging could begin. The project ended in 2003. The project was considered profitable by generating an estimated \$2.0 million in royalties.

The dredging of reservoirs holds potential benefits to the City of San Diego. These benefits include increasing the supply of aggregate while restoring lost storage areas by removing sediment buildup in the City's reservoirs. However, with the expenses related to the extensive permitting and studies required to dredge in reservoirs that supply drinking water the benefits are minimized. It should be noted that other dredging opportunities exist where the permitting requirements are not as extensive. Some examples include dredging streams, flood control channels, and lakes that are not used for the storage of drinking water.

Designation of resources in the City of San Diego's General Plan

San Diego is in the final stages of updating its General Plan, the 'blueprint' for the City's development and growth over the next twenty plus years. Included in the General Plan update are general land use designations, based on existing community plans, outlining where San Diego can concentrate its growth. The General Plan provides a balance between the need for concentrated growth and the preservation of San Diego's mineral resources.

According to the Draft General Plan, access to aggregate reserves in western San Diego County has decreased significantly over the past twenty years, due in large part to the region's increased urbanization. The City's Land Development Code (Chapter 13 of the Municipal Code) recognizes land use designations that allow for mining and extraction of mineral resources. In particular, the Industrial Base Zones, along with a few Agricultural Zones allow for "mining and extractive industries."¹

The Impact Analysis of Mineral Resources in the Program Environmental Impact Report concludes that implementation of the Draft General Plan may result in loss of significant mineral resources. The loss would occur not as a result of availability, but through development of non-compatible land uses on or near extraction sites. Residential and commercial developments are examples of non-compatible land uses.

The Program Environmental Impact Report analyzes the potential significant environmental impacts of the adoption and implementation of the Draft General Plan by the City of San Diego.

Over the next twenty years, much of the City's most valuable mineral resources will continue to be extracted at major sites, including: Carroll Canyon; Mission Gorge; Mission Valley; and the Otay River Valley. The twenty year timeline for many of these sites is based on the amount of resources that can be extracted. Once capacity has been reached, the City and property owners will utilize these sites to provide greater residential and commercial development capacity for San Diego. The transition from aggregate extraction to residential/commercial development is in accordance with broader Citywide planning efforts.

CONCLUSION:

Construction aggregate is the largest non-fuel mineral commodity produced in California as well as the nation. Aggregate production plays a major role in the economy of California. Demand continues to grow as infrastructure is maintained and improved. With aggregate sources in the San Diego Region declining and the demand continuing to remain steady, San Diego should look at creative solutions to keep the cost of aggregate

¹ Requires a Conditional Use Permit

at a manageable level and ensure the availability into the future. Possible solutions to increase the supply of aggregate in San Diego include:

- Dredging of lakes, provided that the lakes are not used for the storage of drinking water.
- Dredging of streams and flood control channels as part of an ongoing maintenance plan.
- Participating in the recycling and reclamation of construction materials.
- Exploring the cost and benefits of designating mineral rich sites in the City of San Diego currently zoned for housing and mixed-use development.

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