

5. Environmental Analysis

5.11 MINERAL RESOURCES

This section of the updated Draft Program Environmental Impact Report (PEIR) evaluates the potential impacts to mineral resources in the plan area from implementation of the Santa Ana General Plan Update. The information in this section is based largely on:

- *Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California*, Open-File Report 94-15, California Division of Mines and Geology, December 21, 1995.

This document is available from the California Geological Survey.

5.11.1 Environmental Setting

Minerals are defined as any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances. Mined minerals, or an “ore deposit,” are defined as a deposit of ore or mineral having a value materially exceeding the cost of developing, mining, and processing the mineral and reclaiming the area.

5.11.1.1 REGULATORY BACKGROUND

State

Surface Mining and Reclamation Act

The regulatory setting regarding mineral resources consists of the California Geological Survey Mineral Resources Project, as authorized under the Surface Mining and Reclamation Act of 1975 (SMARA) (California Public Resources Code Sections 2710 et seq.), including designation of “mineral resource zones,” described below.

The California Geological Survey Mineral Resources Project provides information about California’s nonfuel mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources as mandated by SMARA. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the SMARA, which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

The classification process involves the determination of Production-Consumption (P-C) Regions based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only the portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these

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mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four mineral resource zones, as a scientific resource zone, or as an identified resource area.

- **MRZ-1.** Adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2.** Adequate information indicates that significant mineral deposits are present or likely to be present, and development should be controlled.
- **MRZ-3.** The significance of mineral deposits cannot be determined from the available data.
- **MRZ-4.** There is insufficient data to assign any other MRZ designation.
- **Scientific Resource Zone.** Contains unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.
- **Identified Resource Area.** Areas identified by the County or California Geological Survey where adequate production and information indicates that significant minerals are present.

As part of the classification process, an analysis of site-specific conditions is used to calculate the total volume of aggregates in individually identified Resource Sectors. Resource Sectors are MRZ-2 areas identified as having regional or statewide significance. Anticipated aggregate demand in the P-C Regions for the next 50 years is then estimated and compared to the total volume of aggregate reserves identified in the P-C Region.

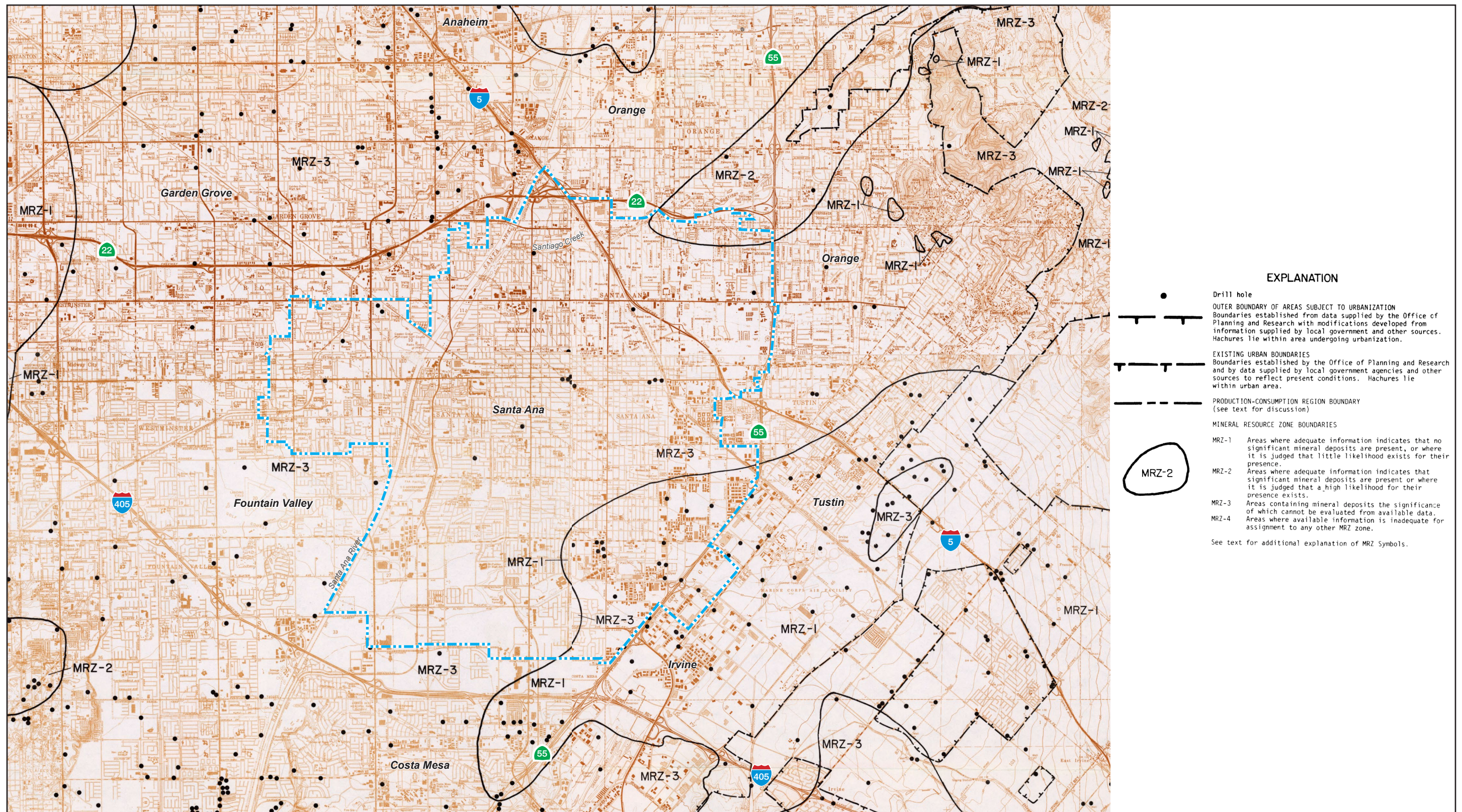
5.11.1.2 EXISTING CONDITIONS

Mineral Resource Zones

The plan area is mostly mapped as MRZ-3, where the significance of mineral deposits cannot be determined from available data. The area in the southeast portion of the city is mapped as MRZ-1, an area where no significant mineral resources are present or there is little likelihood that significant mineral resources are present. A small area in the northeast corner of the city is mapped as MRZ-2, meaning significant mineral resources are known or very likely. This area is the southern tip of the Lower Santiago Creek Resource Area (see Figure 5.11-1, *Mineral Resource Zones*). Areas in the vicinity of the plan area that are designated MRZ-2 are the rest of the Lower Santiago Creek Resource Area and the Santa Ana River Resource Area, 1.5 miles north of the plan area (see Figure 5.11-1, *Mineral Resource Zones*).

The plan area is in the Orange County-Temescal Valley P-C Region, which spans Orange County from Seal Beach to San Onofre; stretches northeast into Riverside County along the Santa Ana River to encompass portions of Norco and Corona; and runs south into upper Temescal Canyon. In addition to serving western Riverside County, it also provides Orange County and northern San Diego County with aggregate exports.

Figure 5.11-1 - Mineral Resource Zones



EXPLANATION	
	Drill hole
	OUTER BOUNDARY OF AREAS SUBJECT TO URBANIZATION Boundaries established from data supplied by the Office of Planning and Research with modifications developed from information supplied by local government and other sources. Hachures lie within area undergoing urbanization.
	EXISTING URBAN BOUNDARIES Boundaries established by the Office of Planning and Research and by data supplied by local government agencies and other sources to reflect present conditions. Hachures lie within urban area.
	PRODUCTION-CONSUMPTION REGION BOUNDARY (see text for discussion)
MINERAL RESOURCE ZONE BOUNDARIES	
	MRZ-1 Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
	MRZ-2 Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
	MRZ-3 Areas containing mineral deposits the significance of which cannot be evaluated from available data.
	MRZ-4 Areas where available information is inadequate for assignment to any other MRZ zone.
See text for additional explanation of MRZ Symbols.	

City of Santa Ana

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Scale (Miles)



Source: California Division of Mines and Geology, 1981

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Known Mineral Resources

Mineral resource sectors are nonurbanized areas judged to contain a significant deposit of construction-quality aggregate that is available—from a general land use perspective—to meet future needs of the region (i.e., 50 years). Mineral resource sectors include areas currently permitted for mining and areas found to have land uses compatible with possible mining. The Orange County-Temescal Valley P-C Region contains a number of resource sectors that the State has designated of “regional significance;” it also has “regionally significant construction aggregate resource areas” in portions of the Santa Ana River within the Prado Basin and behind Mount Rubidoux. Significant aggregate resources also occur south of Corona within and along Temescal Wash and south toward Lake Elsinore. There are no mineral resource sectors in the plan area. The nearest—Sector J of the Lower Santiago Creek Resource Area—is a mile northeast of the plan area (see Figure 5.11-2, *Mineral Resource Sectors*).

Active and Inactive Mines

No active or inactive mines are mapped in the plan area according to the California Office of Mine Reclamation’s “Mines Online” website. One inactive sand and gravel quarry, owned by the R.J. Noble Company, is 3.75 miles north of the plan area at 15505 East Lincoln Avenue in Orange (OMR 2012).

Oil Fields and Drilling Operations

Oil fields and drilling operations abound in Newport Beach and Huntington Beach, but Santa Ana is not known to lie above an oil or gas field. Exploratory drilling activities took place from 1924 to 1956 in Santa Ana but did not produce any oil and were later abandoned (Santa Ana 1997)

Aggregate Supplies and Demands, Orange County-Temescal Valley Production-Consumption Region

Aggregate *reserves* are aggregate that has been determined to be acceptable for commercial use, that exists on properties owned or leased by aggregate-producing companies, and for which permits have been granted to allow mining and processing. Aggregate *resources* include reserves as well as all potentially usable aggregate materials that may be mined in the future, but for which no permit has been granted or no marketability has been established. Aggregate resources, reserves, and projected 50-year demands in the Orange County-Temescal Valley P-C Region are listed in Table 5.11-1. As of 2018, aggregate reserves in the Orange County-Temescal Valley P-C Region are projected to be depleted in 41 to 50 years. Annual production of aggregate in the Orange County-Temescal Valley P-C Region for the year 2016 was more than 5 million tons.

Table 5.11-1 Orange County-Temescal Valley P-C Region: Aggregate Resources, Reserves, and Demands

Permitted PCC-Grade Aggregate Reserves	862 million tons
50-Year Demand	1,079 million tons
Estimated Depletion, PCC-Grade Aggregate Reserves	41 to 50 years
Source: CGS 2018.	

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Permitted aggregate reserves in the Orange County-Temescal Valley P-C Region are 862 million tons, and the projected 50-year aggregate demand is 1,079 million tons; thus, permitted resources are 80 percent of the projected 50-year demand (CGS 2018).

5.11.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

- M-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- M-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.11.3 Regulatory Requirements and General Plan Policies

5.11.3.1 REGULATORY REQUIREMENTS

No existing regulations are applicable to impacts associated with mineral resources.

5.11.3.2 GENERAL PLAN UPDATE POLICIES

The following are relevant policies of the Santa Ana General Plan Update, which may contribute to reducing potential mineral resource impacts.

Conservation Element

- **Policy 2.3 Resource Management.** Efficiently manage soil and mineral resource operations to eliminate significant nuisances, hazards, or adverse environmental effects on neighboring land uses.

5.11.4 Environmental Impacts

5.11.4.1 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Notice of Preparation disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-1: Project implementation would not result in the loss of availability of a known mineral resource. [Thresholds M-1 and M-2]

As shown in Figure 5.11-1, *Mineral Resource Zones*, the plan area is mostly mapped as MRZ-3, which is an area where the significance of mineral deposits cannot be determined from available data. The area in the southeast portion of the city is mapped as MRZ-1, which means an area where no significant mineral resources are present or there is little likelihood that significant mineral resources are present. A small area in the northeast

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corner of the city is mapped as MRZ-2, which means significant mineral resources are known or very likely. This area is the southern tip of the Lower Santiago Creek Resource Area. Areas in the vicinity of the plan area that are designated MRZ-2 are the rest of the Lower Santiago Creek Resource Area, and the Santa Ana River Resource Area, 1.5 miles north of the plan area.

No mineral resource sectors and active or inactive mines are in the plan area. The nearest mineral resource sector is Sector J of the Lower Santiago Creek Resource Area, located 1 mile northeast of the plan area (see Figure 5.11-2, *Mineral Resource Sectors*). Given that the entire General Plan Update plan area does not have mineral resource sectors and no active or inactive mines, implementation of the proposed project would not cause a loss of availability of known mineral resources.

Implementation of the General Plan Update would increase demand for aggregate, and especially PCC-grade aggregate, in the Orange County-Temescal Valley P-C Region, but would not decrease availability of mineral resources.

Level of Significance Before Mitigation: With the implementation of Conservation Element Policy 2.3, Impact 5.11-1 will be less than significant.

5.11.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.11-1.

There are no significant unavoidable adverse impacts relating to mineral resources.

5.11.6 References

CDMG (California Division of Mines and Geology). 1995, December 21. Open File Report 94-15: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties. California. Part III. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_94-15/OFR_94-15_Text.pdf.

CGS (California Geological Survey). 2018. Aggregate Sustainability in California Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves. http://www.calcima.org/files/MS52_California_Aggregates_Map_201807.pdf.

OMR (California Office of Mining Reclamation). 2012. Mines Map. <http://maps.conservation.ca.gov/mol/>.

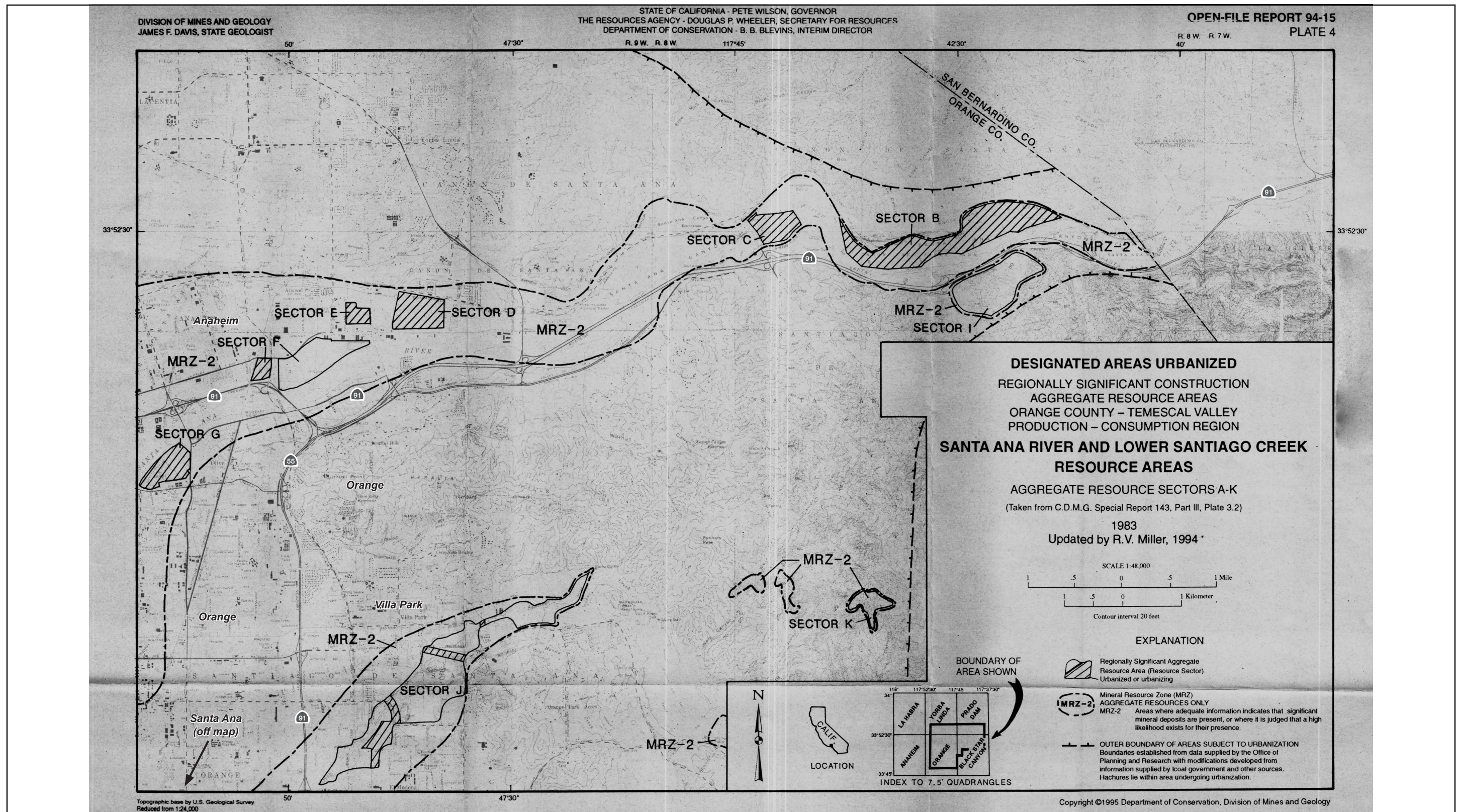
Santa Ana, City. 1997, October 16. *Draft Environmental Impact Report for the Land Use Element of the Santa Ana General Plan*.

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Figure 5.11-2 - Mineral Resource Sectors



Source: Department of Conservation, Division of Mines and Geology, 1995



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