

3.1.6 Mineral Resources

The topic of minerals was not addressed in either the 1981 Sycamore Springs or 1983 Hewlett Packard certified EIRs. A Mineral Resource Technical Report was prepared for the Proposed Project by Leighton and Associates, Inc. (2009); this study is the basis for the analysis of impacts presented below. The complete Mineral Resource Technical Report is included as Appendix P of this EIR.

3.1.6.1 Existing Conditions

Topographic Setting

The Project site is located within the Peninsular Ranges Geomorphic Province, near the western edge of the Southern California Batholith. Erosion and regional tectonic uplift created the valleys and ridges of the area. Natural drainage is controlled by a broad canyon that borders the east side of the northern portion of the site and drains in a southwestward direction into the southwest flowing San Luis Rey River.

Land Use

Current land uses north of SR-76 include dirt roads, a paved “airfield” for model airplanes, and a few small scattered shade structures. The parcels south of SR-76 are undeveloped and crossed by a series of paved roads. The Project parcels are zoned either S90 (Holding Area) or A72 (General Agriculture); no Project parcels or adjacent parcels are identified with the County's Special Purpose Regulations zoning of S82 for Extractive uses. The existing General Plan land use is 21 (Specific Plan Area).

Mineral Resource Zones

As mandated by the Surface Mining and Reclamation Act of 1975 (SMARA), in 1982, the California State Mining and Geology Board classified the western one-third of San Diego County (called the Western San Diego County Production-Consumption (P-C) Zone) into distinct Mineral Resource Zones (MRZ) according to the Guidelines for Classification and Designation of Mineral Lands. The MRZ were established based on the presence or absence of significant sand and gravel deposits and crushed rock source areas. Such construction materials, collectively referred to as “aggregate,” provide bulk and strength to Portland Cement Concrete (PCC) and asphalt concrete. Essential elements of the built environment, including roads, parking lots, pipelines, and buildings, are made with concrete. The MRZ classification system focuses on identifying sources of aggregate for PCC. Deposits acceptable for use as PCC aggregate are subject to strict specifications to ensure the manufacture of strong durable concrete. The following categories are provided in the mineral land classification for aggregate minerals in the Western San Diego County P-C region (CGS 1996a, 1982).

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that there is little likelihood for their presence.

- **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that there is a high likelihood for their presence.
- **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.

MRZ mapping in Appendix P indicates the two zones mapped on and near the Project site are MRZ-2 and MRZ-3 (see Figure 2 of Appendix P).

Geology

The Project site north of SR-76 primarily is underlain by Quaternary-age older alluvium/terrace deposits over granitic rock. Younger alluvial deposits underlie the parcels south of SR-76 and line the narrow drainages north of SR-76. The County summarizes the importance of geologic formations to the availability of mineral resources as follows (County 2008b):

- **Quaternary alluvium** – Sand and gravel can easily be mined and processed for construction materials from this geologic environment.
- **Tertiary Age sedimentary rocks** – Conglomerate and other sedimentary rock types can be quarried for construction materials from this geologic environment.
- **Cretaceous Age crystalline rocks and Upper Jurassic metavolcanics** – Granitic rocks and other rock types can be quarried for coarse aggregates that are needed for concrete, riprap (broken rock) for breakwaters and bank protection, as well as decorative and dimension stone from this geologic environment.

MRZ-2 Mapped Areas

The greater San Luis Rey River Valley has been identified as an MRZ-2 resource area for a distance of nearly 30 miles, from upstream of Oceanside (approximately 12 miles west of the Project) to where the River channel narrows upstream of Rincon (approximately 17 miles east of the Project). The River Valley and adjacent alluvial fan deposits were identified as containing an estimated 1.6 billion tons of sand and 1.2 billion tons of coarse aggregate through the 14,607-acre drainage basin (CGS 1982).

The Project site is located at the east end of Sector C and near the western edge of Sector D of the San Luis Rey River Resource Area (see Figure 6 of Appendix P). Sector C comprises the middle reaches of the San Luis Rey River channel, which includes Bonsall eastward to less than one mile east of I-15, covering about 2,160 acres. Sector D is a 3,740-acre area mapped between I-15 on the west (downstream end) and Pauma Valley on the east (upstream end). Approximately 990 million tons of quality (PCC grade) aggregate resources were estimated to

exist in Sectors C and D, including 660 million tons of sand and 330 million tons of gravel (CGS 1982).

The three parcels south of SR-76 are partly or wholly mapped as MRZ-2. Geologically, this area is characterized by the presence of younger (Quaternary-age) river channel, floodplain, and terrace deposits that have been eroded from the older (Tertiary to Cretaceous-age) bedrock units, transported, and re-deposited. They consist of naturally loose mixtures of sands and rounded gravels.

MRZ-3 Mapped Areas

Most of the Project site is mapped as MRZ-3, except for the parcels south of SR-76 as noted above. According to the explanations presented by CGS (1982), geologic formations or deposits that do not or have not been utilized for aggregate commonly do not have test data and studies are not available. Areas mapped as MRZ-3 include a wide variety of areas across all of San Diego County. The MRZ-3 area of older alluvial terrace deposits on the Project site north of SR-76 is well differentiated from the alluvium in the adjacent area in the San Luis Rey River known to be MRZ-2. Because the terrace deposits are generally more weathered and contain more fine material, they are less minable and less marketable than adjacent known MRZ-2 deposits. Narrow drainages within the northern portion of the Project site, however, contain what appear to be relatively minor deposits of younger alluvium correlative with the alluvium identified as MRZ-2 in the San Luis Rey River to the south.

Sand Mining Operations

Multiple companies have been mining sand from the San Luis Rey River for many years. Operations in the vicinity of the Project are described below (see Figure 6 of Appendix P).

Fenton Sand Mine

The Fenton Sand Mine originated as a 27-acre sand mine initially permitted in 1969. In 1975, a 30-year Major Use Permit was granted to allow extraction from an expanded 211-acre area. It was operated by the H.G. Fenton Company through 1998, when Hanson Aggregates assumed responsibility for the operation. They continued to mine and process sand and gravel through 2000. The discovery of endangered species in areas bordering the operation limited Hanson's ability to expand the mine. Hanson closed the sand and gravel processing plant as of September 15, 2005 (California RWQCB 2006). Although the plans for long-term usage of the site have been debated, the site includes a 207-acre conservation easement established by Hanson in accordance with their Clean Water Act Section 404 permit. The site, therefore, has been adopted back into the San Luis Rey fluvial ecosystem as overseen by the USFWS, ACOE, and CDFW.

Pankey Pits

The closest known historical aggregate extraction operation was located in the River southeast of the site. This property was originally known as the Pankey Pits, where the Marron Brothers

extracted sand and gravel. Like many in-stream operations, permitting processes and regulations became increasingly difficult, and the site was entirely inactive by the 1990s (CGS 1996b). An adjacent parcel known as Pankey Ranch was acquired by Palomar Aggregates in 1997.

Pankey Ranch/Rosemary's Mountain

In the late 1980s, Palomar Grading and Paving acquired a lease on the Pankey Ranch, a hillside immediately north of the Pankey Pits. The approximately 100-acre site is a small peak known as Rosemary's Mountain, ranging in elevation of approximately 300 to 990 feet. In 1989, Palomar submitted a petition to the State of California Division of Mines and Geology (CDMG, now CGS) for a reclassification of the MRZ-3 zoned property to MRZ-2. Based on data provided by Palomar and confirmed by CDMG staff, aggregate from the site met the published Caltrans Standards for PCC, asphaltic concrete, base, and sub-base. The mixed aggregate resources demonstrated far exceeded the minimum threshold value of 9.2 million 1998 dollars established by SMARA and the petition was granted (CGS 1989).

Granite Construction Company has since partnered with Palomar on the project, and a Major Use Permit has been obtained. Plans include rock crushing, extraction of aggregate and operation of an asphalt plant on 38 acres of the 94-acre site.

3.1.6.2 Analysis of Project Effects and Determination as to Significance

Both **Scenarios 1** and **2** are addressed separately in the following mineral resources analysis. Because the off-site facilities that would serve the Project are not in areas that would be available for extraction or not in deposits that would have value as mineral resources, off-site facilities are not further addressed in this discussion.

Loss of Availability of a Known Mineral Resource

Guideline for the Determination of Significance

A significant mineral resource impact would occur if:

1. The Project is:
 - On or within the vicinity (generally up to 1,300 feet from the site) of an area classified as MRZ-2; or
 - On land classified as MRZ-3; or
 - Underlain by Quaternary alluvium; or
 - On a known sand and gravel mine, quarry, or gemstone deposit;

AND

The Project will result in the permanent loss of availability of a known mineral resource that would be of value to the region and the residents of the state;

AND

The deposit is minable, processable, and marketable under the technologic and economic conditions that exist at present or which can be estimated to exist in the next 50 years and meets or exceeds one or more of the following minimum values (in 1998 equivalent dollars):

- Construction materials (sand and gravel, crushed rock) - \$12,500,000
- Industrial and chemical mineral materials (limestone, dolomite, and marble [except where used as construction aggregate]; specialty sands; clays; phosphate; borates and gypsum; feldspar; talc; building stone and dimension stone) - \$2,500,000
- Metallic and rare minerals (precious metals [gold, silver, platinum]; iron and other ferroalloy metals; copper; lead; zinc; uranium; rare earths; gemstones and semi-precious materials; optical-grade calcite) - \$1,250,000

Guideline Source

The above identified significance guideline is based on the County Guidelines for Determining Significance – Mineral Resources (July 30, 2008).

Analysis

MRZ-2 Deposits

Under **Scenario 1**, two parcels south of SR-76 and part of the third are mapped as MRZ-2. These areas total approximately 18.2 acres. Additional MRZ-2 areas are located within PA 5 and immediately abut the **Scenario 2** parcel south of SR-76, although this parcel appears to be located in MRZ-3. The MRZ-2 deposits on the Project site south of SR-76 represent a known mineral resource that would be of value to the region and the residents of the state, being within Sector C of the San Luis Rey River Resource Area.

Appendix P evaluated whether these on-site deposits would be minable, processable, and marketable. In order for a deposit to be minable, it must be considered compatible with existing land uses. Based on the County Guidelines, a buffer of 1,300 feet from residences generally has been considered necessary to achieve adequate separation from noise, dust and other characteristics generated by aggregate extraction and processing. Existing residences south of the San Luis Rey River, along Dulin Road and Riverview Court, are within 1,300 feet of the two Project parcels west of Shearer Crossing. A residence along SR-76 east of the Project, in the area slated for the Meadowood development, is within 1,300 feet of the Project parcel east of Shearer Crossing. These existing, off-site residential properties eliminate the potential for extraction within the Project areas mapped as MRZ-2.

Appendix P designated on-site alluvial deposits mapped as MRZ-3 as possibly having MRZ-2 quality. These deposits are in four localized areas north of SR-76 and are mapped as Quaternary alluvium and “younger alluvium.” The deposits could be similar in composition to the San Luis Rey River areas mapped as MRZ-2. This alluvial area north of SR-76 covers approximately

16.6 acres and has been assumed to contain MRZ-2 material in Appendix P. Existing residences within 1,300 feet eliminate the potential for extraction of most of these deposits. The existing residences are west of I-15 and north of Pala Mesa Drive (e.g., on Almendra Court), and west of I-15 and north of SR-76 (e.g., on Via Belmonte). The remaining deposits within the Project site that have been assumed to be of MRZ-2 quality are in two areas, each approximately 3.4 acres in size. Even if the total area were recoverable with a potential depth of recovery of 20 feet (due to potential groundwater constraints), the value of this material is slightly less than eight million dollars. This potential value is well below the County's threshold of \$12,500,000 in 1998 equivalent dollars (equivalent to approximately \$17,500,000 in 2012). The deposits in these small areas are, therefore, not marketable.

The potential for proposed residential development in the Project to eliminate future extraction of off-site MRZ-2 deposits was also examined (see Figure 7 in Appendix P). The closest proposed residential uses would be in the Project's mixed-use district. The only area of MRZ-2 within 1,300 feet of the mixed-use district that is not already eliminated by existing residences is immediately southeast of the I-15/SR-76 interchange and covers less than one acre. This area is too small to be marketable.

Off-site alluvial areas to the east of the Project are mapped as MRZ-3 but encompass possible MRZ-2 quality deposits and are not within 1,300 feet of existing residences. These areas are within the adjacent approved Campus Park development. The majority of this area supports sensitive wetland vegetation (i.e., southern riparian forest) and everything but a small area (less than 0.2 acre) for a future pump station, immediately adjacent to Campus Park West, is presumed to be in permanent open space as part of the 2011-certified Campus Park EIR. The presence and environmental sensitivity of such habitats would result in either restrictions on disturbance (and the corresponding loss of minable area), or requirements for the acquisition of regulatory permits with associated mitigation and substantial expenditures (e.g., acquisition/preservation and/or creation of off-site habitat areas). This area is, therefore, not considered to be minable.

Off-site facilities that would serve the Project, such as utility pipelines are: (1) not in areas that would be available for extraction, either due to proximity to existing residences or location in existing development and locations in roadbed, or (2) not in deposits that would have value as mineral resources.

Based on the above analysis, mapped on-site and most off-site MRZ-2 resources that could be affected by the Project are within 1,300 feet of existing residences; remaining off-site MRZ-2 resources that could be affected by the Project are in too small an area to be marketable. On-site deposits potentially having MRZ-2 quality also are in a limited area and would not be marketable. Off-site deposits potentially having MRZ-2 quality and within 1,300 feet of the Project's proposed multi-family district are in an area that supports sensitive wetland vegetation and is slated to remain as open space in the Campus Park development. Impacts to MRZ-2 deposits would be **less than significant**.

MRZ-3 Deposits

Most of the Project site is classified as MRZ-3. The acreage generally includes the parcel north of SR-76 and encompasses approximately 81 acres.

The data regarding the MRZ-3 material to the north are not sufficient to confirm that it has high enough quality to warrant extraction. The areas identified as older alluvium/terrace deposits have been investigated on the adjacent parcel by others (Geocon, Inc. 2006) and have been found to contain “over 60 feet of medium-dense to dense reddish brown silty to clayey fine to coarse sand.” Because of the fine-grained nature and weathered condition of this material, it has not been a suitable candidate for extraction on other similar properties. The on-site and off-site terrace deposits, therefore, do not represent a known mineral resource that would be of value to the region and the residents of the state. Impacts to these MRZ-3 resources would be **less than significant**.

Loss of Availability of a Locally Important Mineral Resource Recovery Site

Guideline for the Determination of Significance

A significant mineral resource impact would occur if:

2. The Project would 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.

Guideline Source

The above identified significance guideline is based on the County Guidelines for Determining Significance – Mineral Resources (July 30, 2008).

Analysis

This guideline addresses projects that would result in the loss of availability of mineral resources on lands zoned as S82 by the Extractive Land Use Overlay, or General Plan Extractive Land Use Designation (25) and Impact-Sensitive Land Use Designation (24). S82 is a Zoning designation where mining and quarrying are allowed, and the General Plan 25 and 24 designations are applied to areas with economically extractable mineral resources. The County uses these designations to group lands of known, existing, and potential mineral resources. Zoning maps on the County Geographic Information Systems (GIS) Property Profile Mapping Application website indicate that none of the Project parcels or surrounding areas is designated S82 or General Plan 24 or 25.

Because the Project site does not include any known zoning designations of locally important mineral resources, impacts related to the loss of a locally important mineral resource recovery site from implementation of the Proposed Project would be **less than significant**.

3.1.6.3 Cumulative Impact Analysis

As described above, identified mineral resources within the Project site are either: (1) unavailable for extraction; (2) lack sufficient subsurface data to demonstrably meet established standards for construction material; or (3) unsuitable for extraction/use as construction material due to their weathered, and/or fine-grained nature. No significant impacts were identified to MRZ-2 resources on the Project site based on: (1) the location of such areas relative to existing residential development; and (2) the limited extent and low value of the potential MRZ-2 resources that are mapped as MRZ-3.

Based on the above described conditions, implementation the Proposed Project would not result in the loss of availability of known or designated mineral resources that would be of local, regional or statewide value. Accordingly, the Proposed Project would not contribute to any cumulative impacts related to the loss of such mineral resources. **No cumulative impact** is identified.

3.1.6.4 Significance of Impacts

Based on the analysis provided above, impacts related to mineral resources would be **less than significant**.

3.1.6.5 Conclusion

Based on the analysis provided above, no significant Project-specific or cumulative mineral resource impacts would result from implementation of the Project.