

4.11 MINERAL RESOURCES

INTRODUCTION

Mineral resources are naturally occurring chemicals, elements, or compounds formed by inorganic processes or organic substances. These resources include bituminous rock, gold, sand, gravel, clay, crushed stone, limestone, diatomite, salt, borate, potash, geothermal, petroleum, and natural gas resources. Construction aggregate, another mineral resource, refers to sand and gravel (natural aggregates) and crushed stone (rock) that are used as Portland-cement-concrete (PCC) aggregate, asphaltic-concrete aggregate, road base, railroad ballast, riprap, fill and the production of other construction materials.

This section of the EIR describes the existing sources of mineral resources in the proposed Plan Area and evaluates the potential for the proposed Plan to result in the loss of availability of known or locally important mineral resources.

ENVIRONMENTAL SETTING

Regulatory Framework

a. Federal

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) Plan defines multiple-use classes for the Bureau of Land Management (BLM)-managed lands within the CDCA, which includes the parts of the SOI. With respect to geological resources, the CDCA Plan aims to maintain the availability of mineral resources on public lands for exploration and development.¹ This area plan is just north of the Plan Area.

1 Bureau of Land Management, California Desert Conservation Area Plan (September 2016), accessed March 2019, <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=66949>.

b. State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA), as codified in the California Public Resources Code (Section 2710 et seq.), provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations to ensure that adverse environmental impacts are minimized and mined lands are restored to a usable condition. SMARA also encourages the production, conservation, and protection of the State's mineral resources. Section 2207 of the California Public Resources Code provides annual reporting requirements for all mines in the State, and the State Mining and Geology Board is granted authority and obligations under this section.

SMARA also mandates the classification of lands with valuable mineral resources so that land use decisions that may affect mineral-bearing lands can be made with the knowledge of these resources. The SMARA requires the State Geologist to classify areas with potential for significant mineral resources. It states:

The primary objective of the mineral land classifications is to assure that mineral potential and its significance is recognized and considered before land use decisions that could preclude mining are made. The availability of mineral resources is vital to our society. Yet for most types of minerals, economic deposits are rare, isolated occurrences. Access to terrain for purposes of mineral exploration and mine development has become increasingly difficult because California is also faced with growing land use competition.

The State Mining and Geology Board has classified land in California based on the availability of mineral resources. Four mineral resources zone (MRZ) designations have been established for classifying sand, gravel, and crushed rock resources:

- 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 there is a high likelihood for their presence, 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.

Under SMARA, aggregate materials are classified as reserves or resources. Reserves are defined as aggregate materials believed to be acceptable for commercial use that exist within property boundaries owned or leased by an aggregate-producing company, and for which permission allowing extraction and processing has been granted by the proper authorities. Aggregate resources include reserves and similar potentially usable aggregate materials that been granted.

The mineral lands inventory is subject to local public review to ensure that mineral deposits of State or regional significance are identified and protected for future extraction. The State Geologist also prepares an annual mining report that includes information on the amount of land disturbed during the previous year, acreage reclaimed during the previous year, and amendments to the reclamation plan. SMARA further requires mining operations to have approved Mining/Reclamation Plans prior to the start of operations, to allow for future reuse of the mine.

c. Regional and Local

City of Rancho Cucamonga

General Plan

The City's 2010 General Plan recognizes the importance of conserving mineral resources of regional significance. However, it is also sensitive to the potential land use conflicts of extraction activities with adjacent land uses. The Resource Conservation Chapter includes the following goal and policies:

- GOAL RC-7: Protect aggregate mining resources that are sustainably mined and managed, and minimize impacts to surrounding areas.
- Policy RC-7.1: Consider the community value and benefit of designated regionally significant aggregate resources prior to approving any such designated lands for other types of development.
- Policy RC-7.2: Minimize direct and indirect negative impacts of mineral extraction activity on sensitive and adjacent land uses.
- Policy RC-7.3: Ensure effective restoration of expended mining sites in a manner that is aesthetically attractive.
- Policy RC-7.4: Where the City has determined that urban use is a priority over the preservation of potential sites for aggregate recovery, the City shall seek the removal of such areas from SMARA maps.
- Policy RC-7.5: In areas that the State of California has designated as regionally significant aggregate resources, the City will require property titles to include notice of the presence of such resources, in accordance with SMARA.

Existing Conditions

a. Regional

Based on the California Department of Conservation well finder, there are no oil, gas, or geothermal resources in the City of Rancho Cucamonga or the surround area. There is one plugged and abandoned well located near the intersection of Spruce Avenue and Norfolk Drive across from Ruth Musser Middle School.²

Significant local sand and gravel resources in the City are found in alluvial fans in and near the City, including the Lytle Creek (San Sevaine Wash and Etiwanda Creek), San Antonio Creek, Cucamonga Creek, Deer Creek, and Day Creek. These alluvial fans generally start at the canyons at the base of the San Gabriel Mountains, north of the City. While the northern ends of these fans remain undeveloped, the creeks have been channelized in and near the City of Rancho Cucamonga and in developed areas along the creeks.

Based on the Mineral Land Classification prepared by the California Department of Conservation, the City is mainly located within the Claremont-Upland Production-Consumption region, where regionally significant mineral resources have been identified along Day Creek, Deer Creek, Cucamonga Creek, and San Antonio Wash. The northeastern edge of the City is located in the San Bernardino Production-Consumption region, where regionally significant mineral resources have been identified along Lytle Creek and the San Sevaine Wash near the City.

The Mineral Land Classification for the area shows that the areas along the washes and creeks are designated as MRZ-2, where significant mineral deposits are present, with the rest of the City designated as MRZ-3, which means that aggregate resources are present but their significance cannot be evaluated with present data. This designation could be largely due to the presence of boulders and gravelly soils in the City.

The City's northern sphere of influence (SOI) is mostly undeveloped with some existing rural residences and is characterized by large alluvial fans that generally start at the canyons at the base of the San Gabriel Mountains and extend south towards developed areas. Significant sand and gravel resources occur in these alluvial fans in the annexation area. Within the City of Rancho Cucamonga, approximately 1,119 acres are classified as containing aggregate resources. There are 1,411 acres containing aggregate

2 Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Well Finder, <https://maps.conservation.ca.gov/doggr/wellfinder/#/-117.56736/34.11435/18>, accessed March 2019.

resources in the SOI, all of which are in the Plan Area³ as shown in **Table 4.11-1: Regionally Significant Aggregate Resources**.

In 2009, State Geologist processed the termination of mineral resource designation for 18 areas in 11 sectors due to the presence of adjacent incompatible land use developments, such as housing, a new freeway, and a flood-control channel; therefore, these areas are no longer considered to be mineral resource areas. Among these are C-2 on the Upper Cucamonga Fan and portions of D-3 on the Deer Creek Fan. While 2 new sectors were proposed for designation in the San Bernardino Production-Consumption region, another 57 areas in 8 sectors were processed for termination.

b. Plan Area and Surrounding Area

The central portion of the Plan Area, generally coinciding with the Deer Creek and Day Creek dry washes, is classified as MRZ-2. The remainder of the Plan area is classified as MRZ-3. The locations of these MRZs are shown in **Figure 4.11-1: Mineral Resource Zones**.

**Table 4.11-1
Regionally Significant Aggregate Resources**

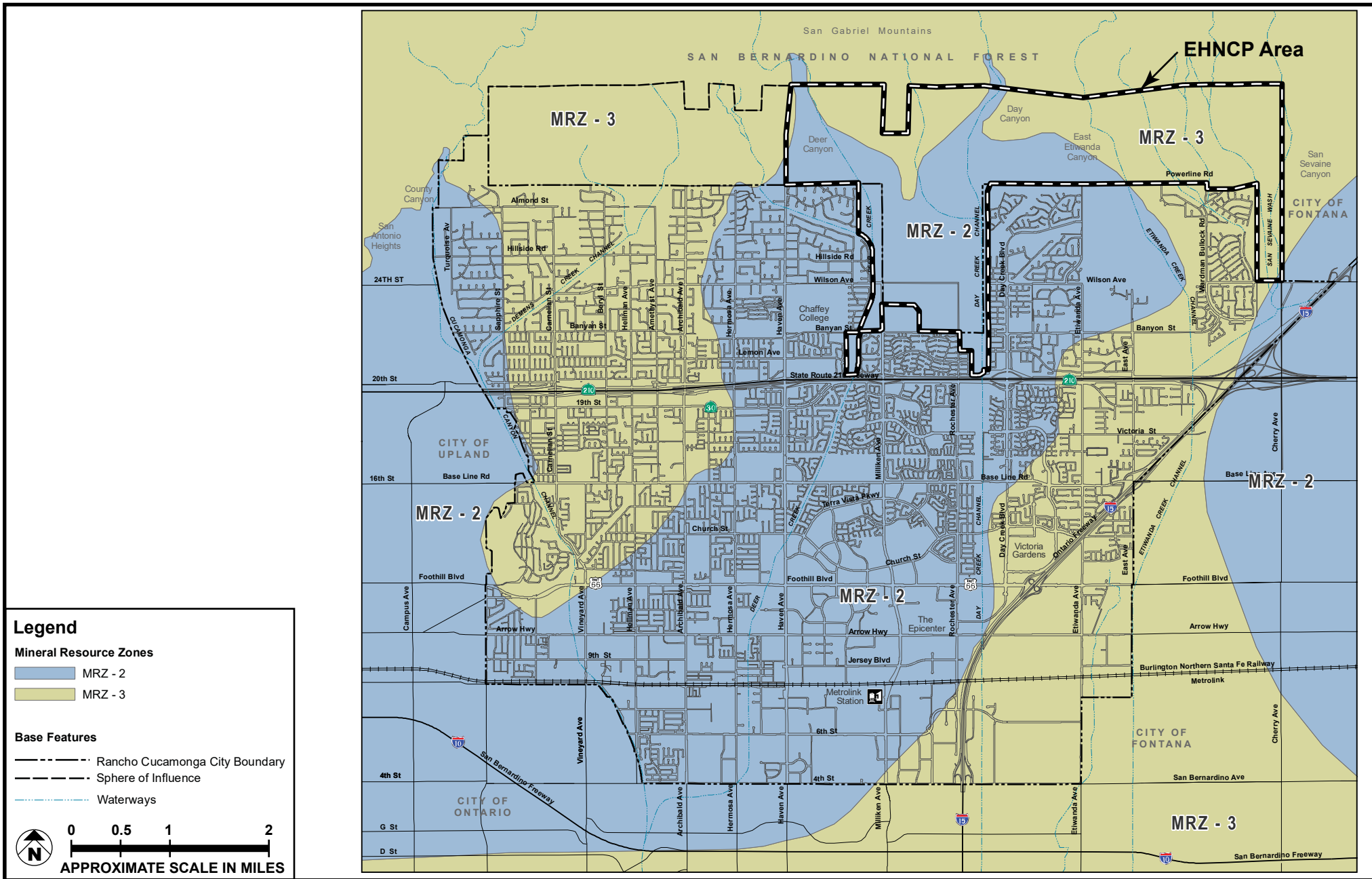
Sector Number	Sector Name	Acres (Approximate)		Estimated Potential Aggregate Reserves (short tons)	General Plan Land Use Designations
		City	SOI		
A-4	Lytle Creek Fan	352	0	167,300,000	Flood Control/Utility Corridor, General Commercial, and Low Density Residential
A-7	Lytle Creek Fan	124	0	210,800,000	Low Density Residential, Flood Control, School, Medium Density Residential
C-1	Upper Cucamonga Fan	88	0	19,600,000	Open Space, Hillside Residential, Flood Control
C-2	Upper Cucamonga Fan	44	0	14,100,000	Flood Control, small portion of Very Low Density Residential
D-1	Deer Creek Fan	0	325	61,800,000	Flood Control, Open Space, and small portion designated Hillside Residential

3 Rancho Cucamonga 2010 General Plan EIR, Mineral Resources, page 4.11-4

Sector Number	Sector Name	Acres (Approximate)		Estimated Potential Aggregate Reserves (short tons)	General Plan Land Use Designations
		City	SOI		
D-3	Deer Creek Fan	511	880	86,400,000	Predominately Flood Control and Conservation, with small areas designated as Very Low, Low Medium, and Medium High Residential; School
D-16	Deer Creek Fan	0	206	13,900,000	Flood Control, Open Space, Conservation, and Hillside Residential
Total		1,119	1,411	537,900,000	

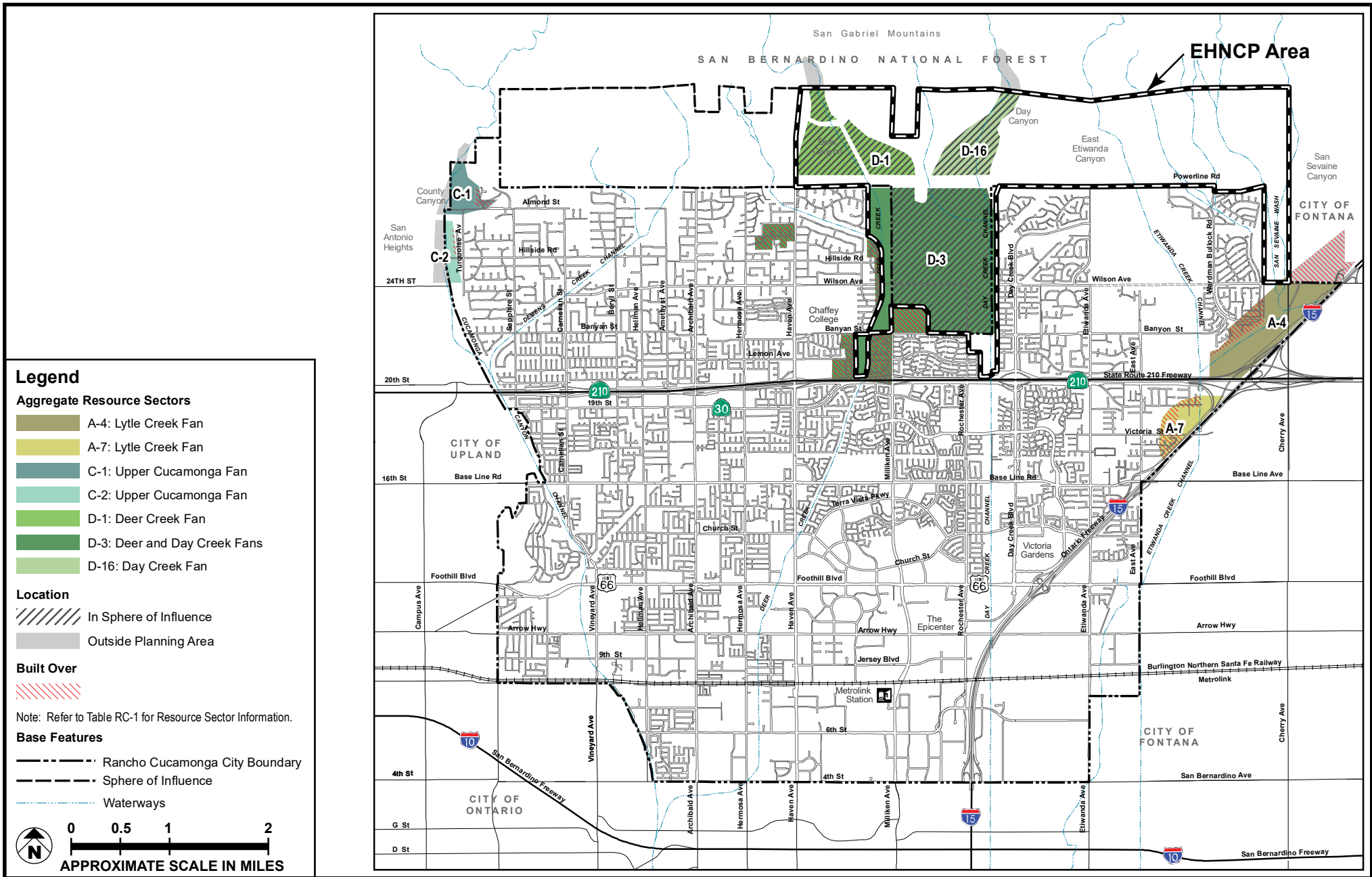
Source: Rancho Cucamonga 2010 General Plan EIR, Mineral Resources, page 4.11-4.

The Plan Area is located within the Claremont-Upland Production-Consumption region. There are three aggregate resource sectors in the Plan Area; Two within the Rural/Conservation Area (RCA): Aggregate Resource Sector D-1 (Deer Creek Fan) and Aggregate Resource Sector D-16 (Day Creek Fan), and one within the neighborhood area: Aggregate Resource Sector D-3 (Deer and Day Creek Fans) as shown in **Figure 4.11-2: Aggregate Resource Sectors**. Estimated potential aggregate reserves in sectors D-1, D-3, and D-16 are 61,800,000 tons, 86,400,000 tons, and 13,900,000 tons, respectively as shown in **Table 4.11-1**.



SOURCE: California State Department of Conservation, California Geological Survey, Mineral Land Classification of the Greater Los Angeles Area - 1987

FIGURE 4.11-1



SOURCE: California State Department of Conservation, California Geological Survey - 1987

FIGURE 4.11-2

The Inland Rock/Day Creek Spreading Grounds (California Mine ID 91-36-0018) is an aggregate quarry located within Aggregate Resource Sector D-3, within the Plan Area. The County of San Bernardino issued a conditional use permit (CUP) to Hanson Aggregates LLC for open pit sand and gravel mining operations and approved a Mining/Reclamation Plan 86M-04 for the project in 1986. The Mining/Reclamation Plan was amended in 1996, 2005, and 2013. In the 2013 amendment, production was reduced to 750,000 tons per year. Conditions of approval (COA) were adopted for the third (2013) amendment, subsequently, mining was voluntarily ceased, and a closure plan implemented. The mine is in its final stages of reclamation.⁴

The permit allowed an annual maximum production of 750,000 tons for a 45-year period ending in 2031. The mining and reclamation area comprises 356 acres of total holdings of 765 acres, with a maximum mining depth of 60 feet. Production began in 1992. Mining consisted of hauling excavated material to an on-site processing plant, where material was carried on conveyors for crushing, screening, and washing. Silt and clay fines from washing the aggregate were stored in settling ponds. Fuel for equipment was stored in above-ground tanks on concrete pads. Mining wastes were limited to topsoil/overburden from mining, waste silt/clay fines from aggregate washing, and waste concrete from washing ready-mix concrete trucks. Mining operations ceased in 2014, and the mine operator has indicated no intent to reopen. As previously mentioned, portions of this D-3 area on the Deer Creek Fan were processed for the termination of mineral resource designation in 2009 due to the presence of adjacent incompatible land uses.

The County's 1986 approved reclaimed end land use for the quarry was once water spreading channels for the Day Creek Canyon overflow. The reclamation plan required reclamation concurrent with active mining as aggregate resources were developed in phases and with revegetation of mined areas occurring as soon as practical. It also required grading for final slopes, revegetation; removal of fines from the settling ponds, processing equipment and structures; and mitigation for all hazards. Final slopes, including drainage and erosion control, have been completed, as required by the approved reclamation plan. County staff inspected the final grading and determined it complied with the reclamation plan requirements. The rock crusher, screening equipment, and support facilities have been removed. There was no evidence of environmental contamination from those uses. Revegetation efforts are continuing.

Since this time, the surplus property is no longer needed to handle storm runoff from Day Creek and Deer Creek, because flood protection projects constructed during the past four decades now divert flood

4 Mines Department of San Bernardino County, Phone Conversation with George Kenline, County Mining Engineering Geologist, April 23, 2019.

waters away from the property. As such, San Bernardino County Flood Control District plans to sell 1,144 acres of vacant surplus land adjacent to Rancho Cucamonga to fund needed flood protection projects elsewhere in the Rancho Cucamonga area.⁵

ENVIRONMENTAL IMPACTS

Thresholds of Significance

To assist in determining whether the proposed Plan would have a significant effect on the environment, the City finds the proposed Plan may be deemed to have a significant impact related to mineral resources if it would:

Threshold MR-1: Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state.

Threshold MR-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.

Impact Analysis

Threshold MR-1: Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state.

Sand and gravel are necessary ingredients for urban construction, and builders often rely on local sources for these materials to control construction costs. However, the extraction of aggregate impacts the surrounding environment and can adversely impact adjacent planned land uses in terms of noise, dust, traffic, and aesthetics. Consequently, land uses near ongoing or planned resource extraction areas must be carefully considered to minimize potential conflicts.

Rural/Conservation Area

The RCA contains portions of MRZ-2, and the rest of the area is designated MRZ-3. The RCA contains two aggregate resources zones: Aggregate Resource Sector D-1 (Deer Creek Fan) and Aggregate Resource Sector D-16 (Day Creek Fan). Estimated potential aggregate reserves in sectors D-1 and D-16 are 61,800,000 tons and 13,900,000 tons, respectively. These aggregate resource zones would remain essentially untouched, as these areas are the open space and preserve areas of the Plan. However, a very limited amount of rural residential development on privately owned property could occur.

⁵ City/County Reimbursement Agreement, Approved by City Council on October 18, 2017.

The BLM owns mining rights on 20 acres of land within four privately-owned parcels within the RCA. The Plan would not conflict with the BLM's current mineral rights and would work in coordination to ensure the mining would proceed as existing operation in the four identified parcels within the SOI. The lands were originally purchased under an act of Congress in 1938. The City is limited in its ability to prohibit or dictate particular uses on federal lands reserved for mining activities.

The Plan implements the existing General Plan for the RCA, adopts one Regulating Zone – Rural Zone with 4 sub-zones that are consistent with the existing General Plan designations. The Plan would limit the amount of residential development on private property to a maximum of 100 units. Access to these aggregate resources would remain and as such, no regional mineral resource impacts would occur in the RCA.

Neighborhood Area

The neighborhood area is designated MRZ-2, and the Aggregate Resource Sector D-3 (Deer and Day Creek Fans) is the only aggregate resource zone located within the area. Estimate potential aggregate reserves in D-3 are 86,400,000 tons. This area also contains the now closed and reclaimed Inland Rock/Day Creek Spreading Grounds aggregate quarry.

The D-3 Aggregate Resources zone, including the reclaimed aggregate quarry, would be completely developed under the Plan. While portions of this D-3 area were processed for the termination of mineral resource designation in 2009 due to the presence of adjacent incompatible land uses, the loss of the D-3 area would represent a loss of approximately 16% of the estimate potential aggregate reserves in the region.⁶ It should also be noted that a 200-acre portion of the D-3 area is already restricted by the existing Open Space Easement. Nonetheless, this loss of regionally important mineral resources was accounted for in the City's 2010 General Plan EIR and was found to be significant and unavoidable. Consistent with the General Plan EIR, Plan-related impacts to regional mineral resources would be significant. The only way to avoid this impact would be to preclude development on the D-3 aggregate resources area; therefore, there is no feasible mitigation.

6 Estimate potential aggregate reserves in D-3 are 86,400,000 tons, estimated potential aggregates reserves in the region are 537,900,000 tons.

Threshold MR-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.

Rural/Conservation Area

The RCA contains portions of MRZ-2, and the rest of the area is designated MRZ-3. As previously mentioned, the RCA contains two aggregate resource zones. These aggregate resource zones would remain essentially untouched; however, a very limited amount of rural residential development on privately-owned property could occur. The D-1 Aggregate Resources zone would be within the proposed Deer Canyon Preserve, and currently, most of the D-16 Aggregate Resources zone is covered by an existing conservation easement. The Plan as proposed would expand this conservation area, which would cover almost all of the D-16 Aggregate Resources zone.

As previously stated, the Plan implements the existing General Plan for the RCA, adopts one Regulating Zone (Rural Zone) with 4 sub-zones that are consistent with the existing General Plan designations. The Plan would Limit the amount of residential development on private property to a maximum of 100 units. Access to these aggregate resources would remain and as such, no local-mineral resource impacts would occur in the RCA.

Neighborhood Area

The neighborhood area is designated MRZ-2, and the Aggregate Resource Sector D-3 (Deer and Day Creek Fans) is the only aggregate resource zone located within the area. The remaining portions of D-3 not already restricted by the Open Space easement will be completely developed under the proposed Plan. While there are still available aggregate resources in this area, it has been determined by the State Geologist, that several portions of the D-3 area should no longer be classified as mineral resource areas due to the presence of adjacent incompatible land uses. Additionally, the existing Inland Rock/Day Creek Spreading Grounds aggregate quarry has since been closed and remediated with no intention of being reopened. The proposed Plan would not result in a loss of availability of a locally-important mineral resource recovery site. Impacts would be considered less than significant.

CUMULATIVE IMPACTS

The cumulative impacts on mineral resources are evaluated based on the potential impacts of future development and development in the City of Rancho Cucamonga, the SOI, and the Claremont-Upland and San Bernardino Production-Consumption Regions.

The State Mining and Geology Board recognizes that urban development has precluded access to the majority of known resources through development (including construction of roadways and infrastructure) on or adjacent to the resource areas. The recent termination of resource designations in

sectors within the Claremont-Upland Production-Consumption Region, discussed previously, is evidence of continuing urban encroachment into designated mineral resource areas.

Future development in the City and SOI, would contribute to cumulative demand for construction aggregates in the region. Most of the production-consumption regions in the State do not have sufficient supplies to meet their projected 50-year demand. As of 2018, the California Geological Survey estimated that the Claremont-Upland Production-Consumption Region has a 50-year demand for aggregate resources in the amount of 202 million tons. However, only 90 million tons of permitted aggregate resources are available.⁷ For the San Bernardino Production-Consumption Region, the 50-year demand for aggregate resources is 939 million tons, with only 156 million tons of permitted resources. Thus, existing permitted resources cannot meet anticipated demands to the year 2068 in both regions. Therefore, the loss of additional mineral resources due to cumulative development, although not locally significant, would contribute to a cumulatively significant impact related to the loss of known mineral resources. This impact would be significant.

MITIGATION MEASURES

No feasible mitigation measures.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Regionally Important Mineral Resources

Significant and Unavoidable.

Locally Important Mineral Resources

Less Than Significant.

7 Department of Conservation, California Geological Survey, Aggregate Sustainability in California, 2018, Table 1, page 5, https://www.conservation.ca.gov/cgs/Documents/Publications/MS_52_California_Aggregates_Report_201807.pdf.