5.11 MINERAL RESOURCES

This section of the Draft PEIR evaluates the potential impacts to mineral resources in the Plan Area from implementation of the Clovis General Plan and Development Code Update (proposed project). The information in this section is based largely on the Update of Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California (Open-File Report 99-02), California Division of Mines and Geology, April 1, 1999; 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. Minable minerals, or an "ore deposit," are defined as a deposit of ore or mineral having a value materially in excess of 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.

Mineral Resource Classification

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) Region boundaries based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those 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 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 a likelihood of 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.
- **SZ Areas:** Contains unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.
- **IRA Areas:** Areas identified by the County or State Division of Mines and Geology, 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 within the P-C Region.

5.11.1.2 EXISTING CONDITIONS

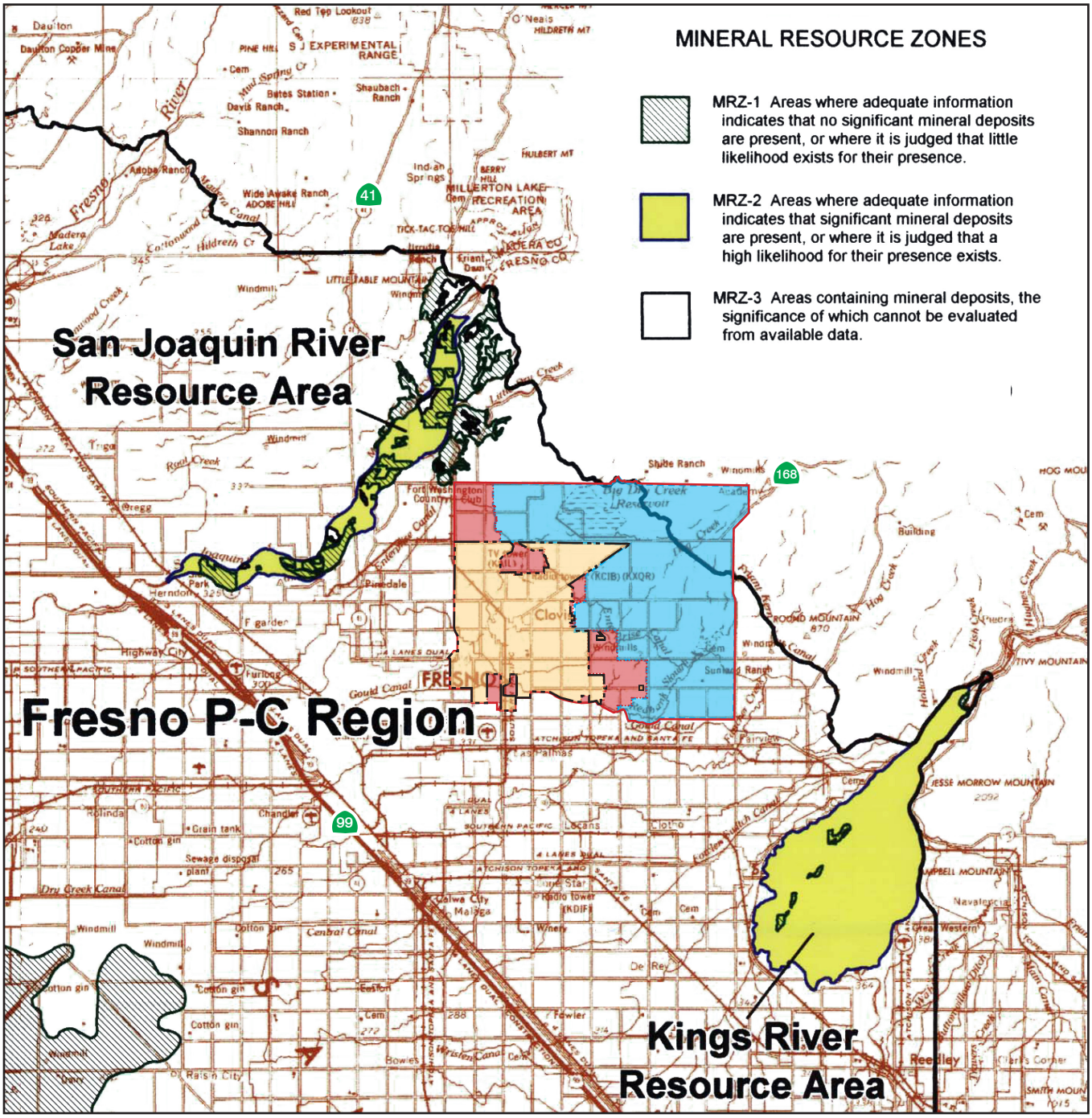
Mineral Resource Zones

The entire Plan Area is mapped as MRZ-3 by the California Geological Survey, which means the significance of mineral deposits cannot be determined from available data (see Figure 5.11-1, *Mineral Resource Zones*). The Plan Area is in the Fresno P-C Region, which spans much of central Fresno County and most of the west half of Madera County. According to Figure 5.11-2, *Mineral Resource Zones Detail*, an area approximately 400 feet west of the northwest corner of the Plan Area is mapped as MRZ-1, that is, no significant mineral resources are present or there is little likelihood that significant mineral resources are present. The nearest areas to the Plan Area that are designated MRZ-2, which means significant mineral resources are known or very likely, are the San Joaquin River Resource Area, 1.1 miles northwest of the Plan Area, and the Kings River Resource Area, 4.6 miles southeast of the Plan Area (see Figure 5.11-1, *Mineral Resource Zones*). The northeasternmost part of the Plan Area is outside of the Fresno P-C Region, and no mineral resource zone map is available for that area.

Known Mineral Resources

Mineral resource sectors are non-urbanized 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. There are no mineral resource sectors in the Plan Area. The nearest sector is Sector S-11b, 1.1 miles northwest near the San Joaquin River (see Figure 5.11-3, *Mineral Resource Sectors*) (CDMG 1999).

Figure 5.11-1



Plan Area Boundary

Fresno Production-Consumption Region Boundary

Clovis City Boundary

Non-SOI Plan Area

Sphere of Influence

Source: CDMG, 1999

CLOVIS GENERAL PLAN

Environmental Impact Report

CLO-14.4L 4.16.14

0 2.5 5 Miles

PLACEWORKS

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MINERAL RESOURCES

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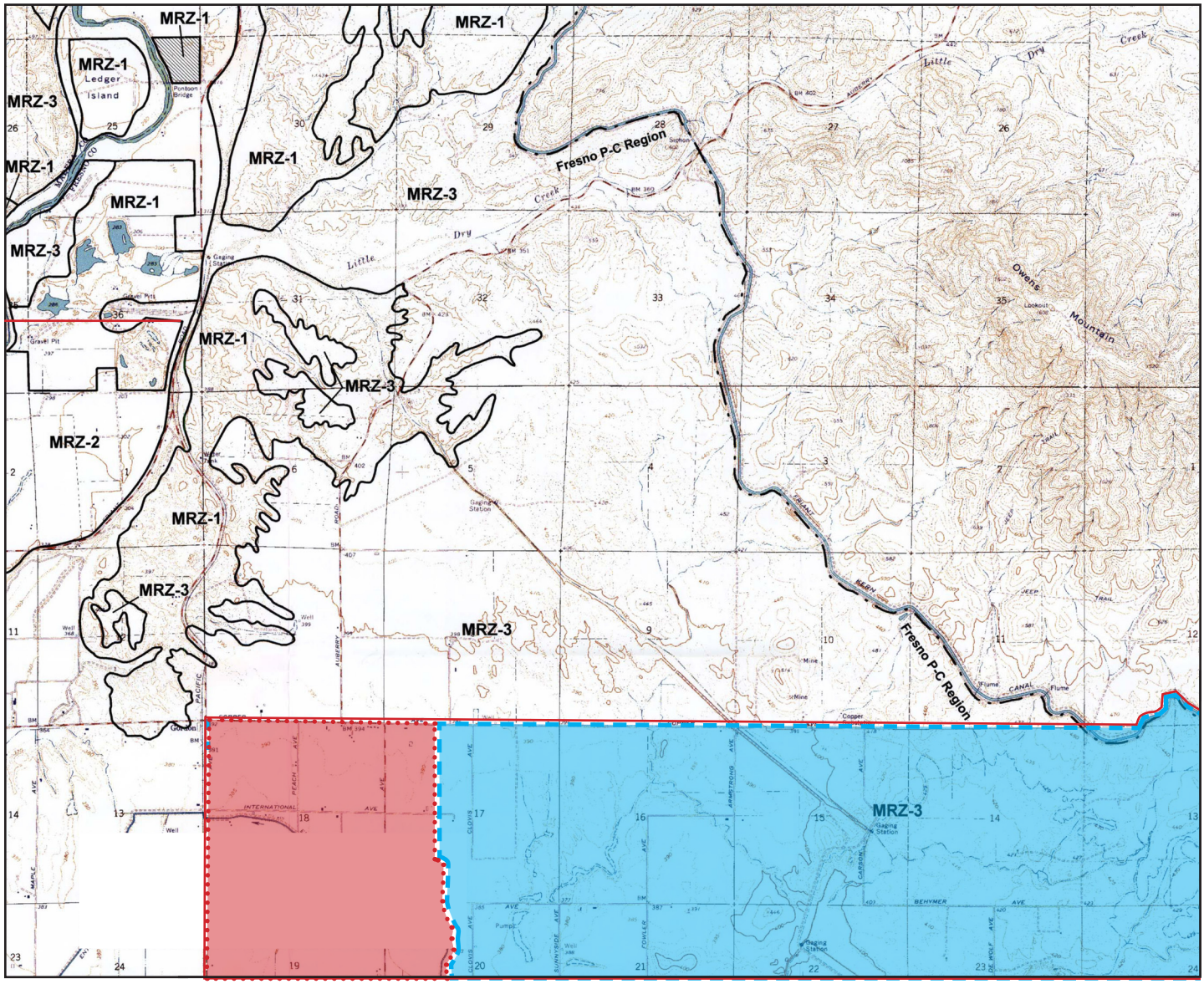
Figure 5.11-2



Updated Area

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.

Plan Area Boundary

Non-SOI Plan Area

Sphere of Influence

Source: CDMG, 1999

CLOVIS GENERAL PLAN

Environmental Impact Report

CLO-14.4L 4.16.14

0 0.5 1 Miles

PLACEWORKS

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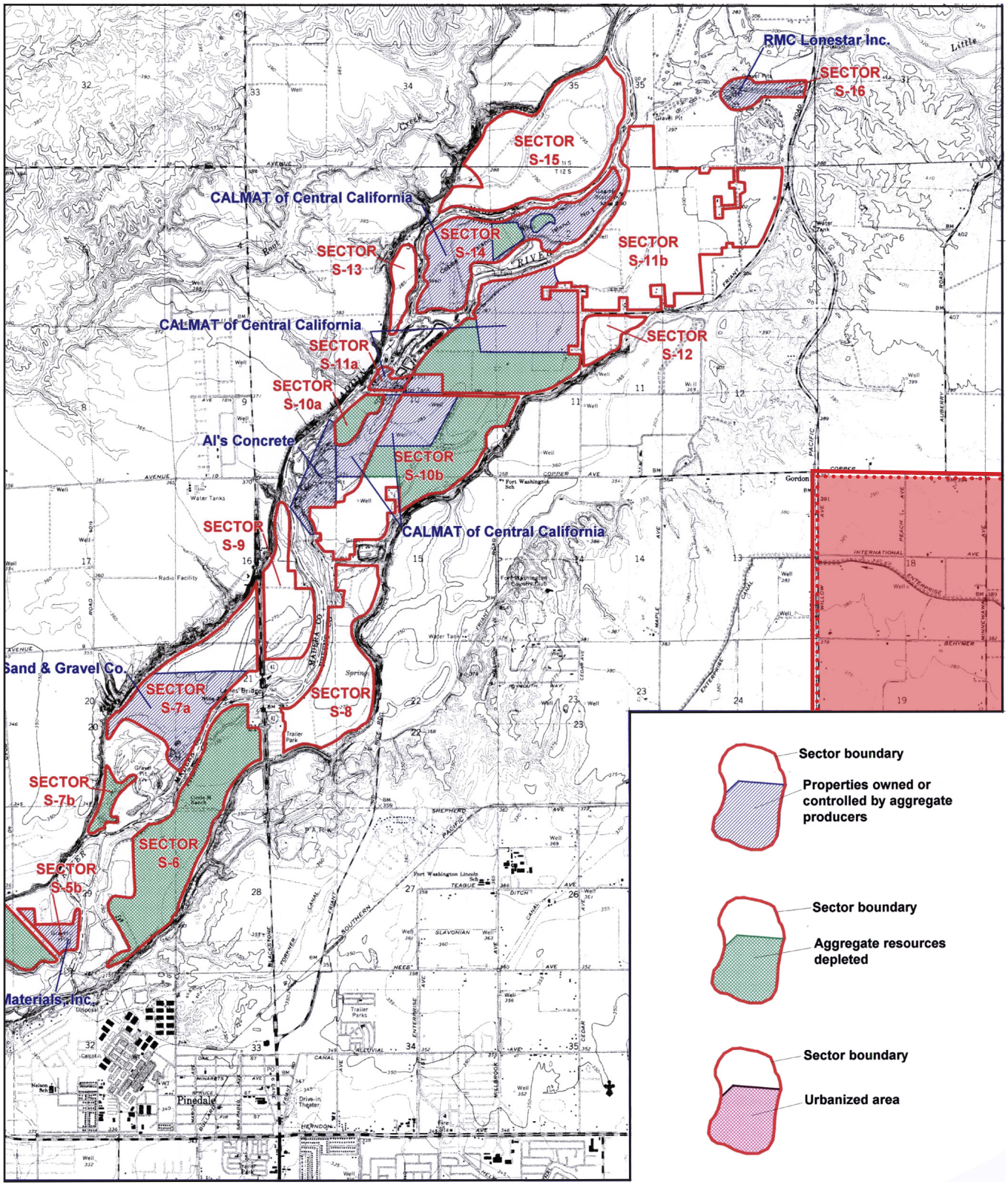
Figure 5.11-3



Source: CDMG, 1999

CLOVIS GENERAL PLAN

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PLACEWORKS

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Active and Inactive Mines

No active or inactive mines are mapped in the Plan Area according to the California Office of Mine Reclamation *Mines Online* website. Within three miles of the northwest corner of the SOI boundary are five active and one inactive sand and gravel quarries along the San Joaquin River. Three of the five active sand and gravel quarries—Calmat/River Rock, Calmat/Friant Road, and Rank Island—have all merged with the Fresno River Rock sand and gravel quarry. The Rockfield Plant is the other active sand and gravel quarry. The inactive quarry is the Bruckner Gravel Pit rock quarry (OMR 2012).

One active dimension stone quarry, Academy Quarry, is east of SR-168 and approximately 1.5 miles east of the northeast corner of the Plan Area boundary (OMR 2012). Dimension stone is natural rock cut to specific sizes and shapes. Academy Quarry is mapped in the Fresno County General Plan as a granite resource area.

An underground copper mine, the Fresno Mine, operated from 1870 to 1912 and is approximately 0.3 mile north of the Plan Area boundary and east of Armstrong Avenue.

Aggregate Supplies and Demands, Fresno Production-Consumption Region

Aggregate **reserves** are aggregate that have been determined to be acceptable for commercial use, that exist within properties owned or leased by aggregate-producing companies, and for which permits have been granted to allow mining and processing of the material. 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 Fresno P-C Region are listed in Table 5.11-1. As shown in this table, as of 2011, Portland cement concrete (PCC)-grade aggregate reserves in the Fresno P-C Region are projected to be depleted in 10 years or less. Portland cement concrete is the type of concrete most commonly used in construction. Average annual production of aggregate in the Fresno P-C Region during the 10-year period 1988–1997 was 4,152,000 tons. The Fresno P-C Region was estimated to contain 89 percent of the population of Fresno County and 67 percent of the population of Madera County based on 2010 US Census data. The same proportions of the two counties' populations were used in projecting the population of the P-C Region out to 2060, using California Department of Finance estimates (Clinkenbeard 2014). The populations of Fresno and Madera counties in 2060 are projected to be 1,615,401 and 373,929, respectively (CDF 2013). Thus, the population of the Fresno P-C Region in 2060 was projected by the California Geological Survey to be about 1,436,000. By comparison, the 2010 US Census counts for the same region is about 929,000 (USCB 2014).

Table 5.11-1 Fresno P-C Region: Aggregate Resources, Reserves, and Demands

Permitted PCC-Grade Aggregate Reserves	46,000,000 tons
50-Year Demand	435,000,000 tons
Estimated Depletion, PCC-Grade Aggregate Reserves	10 years or less

Source: CGS 2012.

Permitted aggregate reserves[1] in the Fresno P-C Region are 46 million tons, and the projected 50-year aggregate demand is 435 million tons; thus, permitted resources are 11 percent of the projected 50-year demand (CGS 2012).

5.11.2 Thresholds of Significance

According to Appendix G of the 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 Environmental Impacts

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

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

Impact Analysis:

2035 Scenario

As shown in Figure 5.11-1, *Mineral Resource Zones*, the entire Plan Area is mapped as MRZ-3, meaning the significance of mineral deposits cannot be determined from available data. The nearest area designated MRZ-2, that is, where significant mineral resources are known or very likely, is the San Joaquin River Resource Area, 1.1 miles northwest of the Plan Area. No mineral resource zones and no active or inactive mines mapped by the Office of Mine Reclamation are in the Plan Area. The nearest mineral resource sector to the City is Sector S-11b, 1.1 miles northwest of the Plan Area near the San Joaquin River (see Figure 5.11-3, *Mineral Resource Sectors*) (CDMG 1999). Given that the entire General Plan Update Plan Area does not have mineral resource significance, any active or inactive mines, nor any mineral resource sectors, implementation of the proposed project would not cause a loss of availability of known mineral resources in the 2035 scenario.

Implementation of the 2035 Scenario would increase demand for aggregate in the Fresno P-C Region, especially PCC-grade aggregate, but would not decrease availability of mineral resources.

[1] Including both Portland cement concrete grade aggregate and asphalt concrete grade aggregate.

Full Buildout

Similar to the 2035 scenario, full buildout of the General Plan Update would have no impact on any known mineral resources, active or inactive mines, nor any mineral resource sectors. As stated above, the closest mineral resource area and sector is the San Joaquin River Resource Area and Sector S-11b, 1.1 miles northwest of the Plan Area (see Figures 5.11-2 and 5.11-3). Thus, the proposed project would not result in the loss of availability of a known mineral resource at full buildout. Full Buildout would increase demand for aggregate in the Fresno P-C Region, especially PCC-grade aggregate, but would not appreciably decrease availability of mineral resources.

5.11.4 Relevant General Plan Policies and Development Code Sections

There are no relevant Clovis General Plan and Development Code Update policies related to mineral resources.

5.11.5 Existing Regulations

State

- California Geological Survey Mineral Resources Project
- Surface Mining and Reclamation Act (California Public Resources Code Sections 2710 et seq.)

5.11.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant for the 2035 Scenario and Full Buildout: 5.11-1.

5.11.7 Mitigation Measures

No mitigation measures are required for the 2035 Scenario and Full Buildout.

5.11.8 Level of Significance After Mitigation

Impacts would be less than significant for the 2035 Scenario and Full Buildout.

5.11.9 References

California Department of Finance (CDF). 2013, January. Report P-1: State and County Population Projections: 2010-2060. http://www.dof.ca.gov/research/demographic/reports/projections/P-1/.

California Division of Mines and Geology (CDMG). 1999, April 1. Open File Report 99-02: Update of Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California.

California Geological Survey (CGS). 2012. Map Sheet 52: Aggregate Sustainability in California. http://www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS_52.pdf.

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

Clinkenbeard, John (Senior Geologist). 2014, May 15. Phone Call. California Geological Survey.