

3.9 Mineral Resources

3.9.1 Introduction

This section presents the affected environment and impacts to mineral resources from implementing the Proposed Project. Where appropriate, mitigation measures are proposed that would reduce potential impacts. Alternatives to the Proposed Project are analyzed in Section 6.

The information in this section is derived from existing plans and policies, which are discussed in detail herein.

3.9.2 Affected Environment

3.9.2.1 Policy and Regulatory Setting

State

Surface Mining and Reclamation Act of 1975 (revised 2007). The Surface Mining and Reclamation Act of 1975 (SMARA) (revised 2007) (Public Resources Code Division 2, Chapter 9, Section 2710 et. seq.) regulates surface mining operations. SMARA is administered by the California Department of Conservation through the Office of Mine Reclamation and the State Mining and Geology Board (SMGB). SMARA declares that “the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety (SMARA Section 2711[a]). SMARA encourages the production and conservation of minerals, while also considering “values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment” (SMARA Section 2711[b]). The responsibilities under SMARA are delegated by the state to Riverside County for all unincorporated areas of the county.

Local

Riverside County General Plan. Relevant mineral resources policies from the *Riverside County General Plan* (2003a) are presented in Table 3.9-1. These policies seek to conserve areas identified as containing significant mineral deposits, including oil and gas resources for potential future use. The policies also promote the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated. Policies in the Riverside County General Plan allow for mineral extraction and processing facilities designated on the basis of the SMARA classification. Areas held in reserve for future mining activities also have this designation. Ancillary structures or uses may be permitted that assist in the extraction, processing, or preservation of minerals. Actual building or structure size, siting, and design will be determined on a case-by-case basis.

TABLE 3.9-1
 Riverside County General Plan Policies Relevant to Mineral Resources
Liberty Quarry Environmental Impact Report, Riverside County, California

General Plan Policy Categories	Policy Number	Policy Description
Open Space-Mineral Resource (OS-MIN)	LU 21.1	Require that surface mining activities and lands containing mineral deposits of statewide or of regional significance comply with Riverside County ordinances and SMARA.
	LU 21.2	Protect lands designated as Open Space-Mineral Resource from encroachment of incompatible land uses through buffer zones or visual screening. (AI 3)
	LU 21.3	Protect road access to mining activities and prevent or mitigate traffic conflicts with surrounding properties.
	LU 21.4	Requires the reclamation of mineral extraction sites to open space, recreational, or other uses that are compatible with the surrounding land uses.
	LU 21.5	Requires an approved reuse plan prior to issuing a permit to operate an extraction operation.
Mineral Resources	OS 14.1	Require that the operation and reclamation of surface mines be consistent with the SMARA and Riverside County Development Code provisions.
	OS 14.2	Restrict incompatible land uses within the impact area of existing or potential surface mining areas.
	OS 14.3	Restrict land uses incompatible with mineral resource recovery within areas designated Open Space-Mineral Resources.
	OS 14.4	Impose conditions as necessary on mining operations to minimize or eliminate the potential adverse impact of mining operations on surrounding properties, and environmental resources.

The *Riverside County General Plan* identifies mineral extraction as an important component of county's economy. Riverside County has extensive deposits of clay, limestone, iron, sand, and aggregates. Classification of land in California takes place in accordance with a priority list established by the SMGB in 1982 or when the SMGB is petitioned to classify a specific area. The SMGB established Mineral Resources Zones (MRZ) to classify lands that contain mineral deposits. The State of California has classified Aggregate Mineral Resource areas within Riverside County. The classifications used by the state to define MRZs are as follows:

- MRZ-1: Areas where the available geologic information indicates no significant mineral deposits or a minimal likelihood of significant mineral deposits
- MRZ-2a: Areas where the available geologic information indicates that there are significant mineral deposits
- MRZ-2b: Areas where the available geologic information indicates that there is a likelihood of significant mineral deposits
- MRZ-3a: Areas where the available geologic information indicates that mineral deposits are likely to exist; however, the significance of the deposit is undetermined

- MRZ-4: Areas where there is not enough information available to determine the presence or absence of mineral deposits

Riverside County, Ordinance No. 555. Riverside County supports mineral extraction through implementation of Ordinance No. 555, which implements the SMARA. Riverside County has determined that the extraction of minerals is essential to the continued economic well-being of the county as follows:

- The reclamation of mined lands will be carried out in such a way that the continued mining of minerals will be permitted.
- The adverse effects of surface mining operations will be prevented or minimized, and mined lands will be reclaimed to a useable condition that is readily adaptable for alternative land use.
- The production and conservation of minerals will be encouraged while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and the residual hazards to the public health and safety will be eliminated.

Ordinance No. 555 requires a permit for mining. The permit application must include a mining plan, a reclamation plan, and proposed financial assurances (in draft form with an estimate of reclamation costs). The permit must be filed with the Riverside County Planning Department, and environmental review under CEQA is required. The content of the permit includes the following:

- **Mining plan.** The mining plan must discuss the time frames for each operational phase and the estimated life of the operation; the location of equipment, offices, stockpiles, settling ponds, interim drainage, machinery and waste dumps, parking, and areas to be mined; and the progression of stripping and excavating. In addition, the location and description of all streams, roads, railroads, sewage disposal systems, water wells, and utility facilities within 500 feet of the Site must be identified. Access roads must be shown and the type of and amount of mineral commodities to be removed must be disclosed.
- **Reclamation plan.** The reclamation plan must discuss, among other things, the reclamation methods including a schedule of the sequence and timing of all stages of reclamation activities. The plan must describe how reclamation of the Site could affect the future use of the area for mining purposes and demonstrate that the Site will be: revegetated for soil stabilization, free of drainage and erosion problems, coordinated with present and anticipated future land use, and compatible with the topography and general environment of surrounding property.
- **Inspections.** Operators must conduct annual inspections and submit reports of mining and reclamation activities to determine whether the surface mining operation is in compliance with the approved mining plan, the approved reclamation plan, the approved financial assurances, any permit conditions of approval, and, in the case of an idle mine, the approved interim management plan. The initial inspection must be conducted by the Riverside County Building Director within 6 months of receipt of the permit under the supervision of a qualified, state-registered civil engineer, state-licensed landscape architect, state-registered geologist, or state-registered forester. This is to be

followed by annual inspections. After completion of the inspection, the Riverside County Building Director shall notify the Director of the Department of Conservation that the inspection has been conducted in accordance with Section 2774(b) of the Public Resources Code.

- **Financial Assurance.** Financial assurances are also required in the permit process. Prior to the mining operation, the operator must post a financial assurance, such as a bond, an irrevocable letter of credit, a cash deposit into a trust fund, or any other financial assurance specified by the SMGB, pursuant to Section 2773.1(e) of the Public Resources Code. The amount of the financial assurance shall be adequate to perform reclamation in accordance with the approved reclamation plan and shall be adjusted annually to account for new lands disturbed, inflation, and reclamation of lands accomplished in accordance with the approved reclamation plan. Upon completion of reclamation in accordance with the approved reclamation plan, the financial assurance shall be released. Written notification of the release shall be provided to the operator and the Director of the Department of Conservation.

3.9.2.2 Existing Conditions

This section provides an overview of the need for the Proposed Project in the context of state, regional, and local aggregate supply and demand projections; and the costs of transport relative to the economic feasibility of aggregate mining and the regional demand for aggregate resources. Transportation cost is the principal constraint defining the market area for an aggregate mining operation (CGS, 2006) and plays an overriding role in the cost of aggregates delivered to the Proposed Project site. The need for construction grade aggregate resources in Southern California, including the target market area for the Proposed Project, is well documented. The context of the need for construction-grade aggregate near the Proposed Project is outlined below and includes relevant information on existing aggregate demand, transportation, potential aggregate sites, and economics. Reports and other documents are discussed in this section in the context of the supply and demand for aggregate in Riverside and San Diego counties.

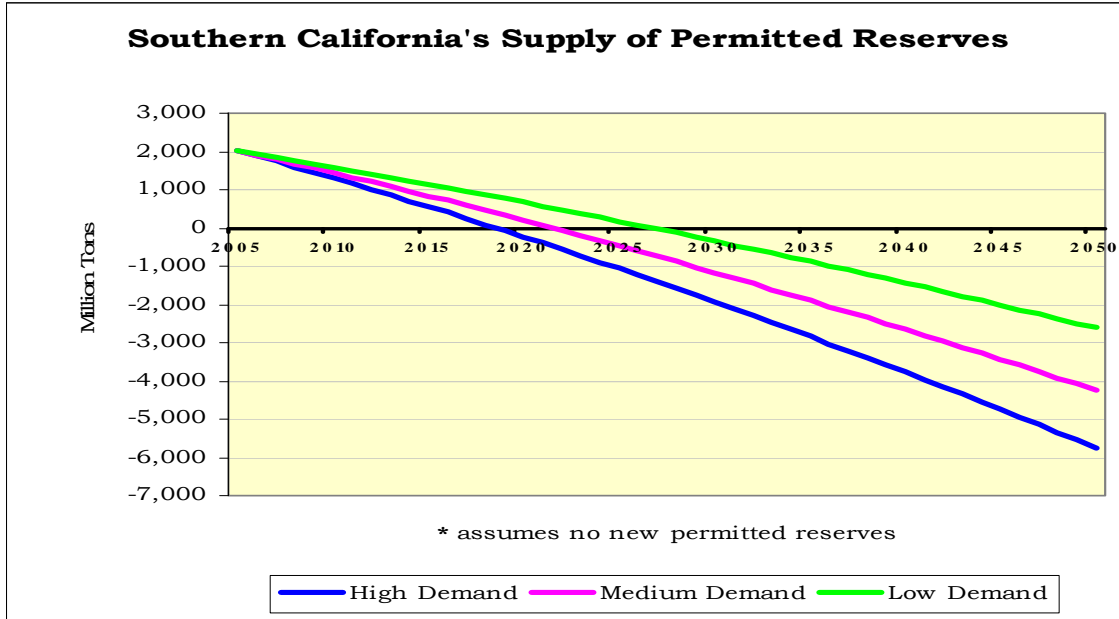
Aggregate Supply and Demand

Aggregate supply in permitted reserves in Southern California and in the vicinity of the project has been decreasing and is projected to continue decreasing through the year 2050. In conjunction with decreasing availability of permitted reserves, the demand for construction-grade aggregate is increasing both throughout California and in the Project Vicinity.

State Setting

California. According to the California Geological Survey (CGS), California has an estimated 74 billion tons of aggregate resources underlying mineral lands classified by the State Geologist; however, only about 5.3 billion tons of aggregate (7.2 percent) have been permitted by cities and counties for mining activities. Permitting of mining sites often can require 5 to 10 years of environmental review and permitting to approve a mining proposal. At the current rate of production of 177 million tons per year (MTPY), the permitted reserves in California will be exhausted in approximately 30 years, based on an average annual per capita consumption rate in California of approximately 6.7 tons (CGS, 2006).

Figure 3.9-1 depicts the high, medium, and low projections through 2050 for available aggregate supply in Southern California if no new reserves are permitted. As shown in the figure, for all demand scenarios, a deficit of aggregate resources is anticipated with no new permitted reserves.



Source: EnviroMINE Inc., 2007

FIGURE 3.9-1
Supply of Permitted Reserves
*Liberty Quarry Environmental Impact Report
Riverside County, California*

Southern California has some of the fastest growing counties in the state, including Riverside County. As shown in Table 3.9-2, the demand for aggregate to meet Southern California’s needs could reach 200 MTPY by 2050.

TABLE 3.9-2
Southern California Projected Annual Aggregate Demand: 2010–2050
Liberty Quarry Environmental Impact Report, Riverside County, California

Year	2010	2020	2030	2040	2050
Southern California Population (millions)	22.46	25.05	27.43	29.51	31.57
Range of Aggregate Demand per Decade (MTPY)					
High Aggregate Demand	150.51	167.83	183.79	197.74	211.49
Medium Aggregate Demand	121.30	135.27	148.13	159.38	170.46
Low Aggregate Demand	89.85	100.20	109.72	118.06	126.26

Source: EnviroMINE Inc., 2007

Regional Setting

Project Vicinity. The Site of the Proposed Project is within the Temescal Valley-Orange County aggregate study area and is adjacent to the Western San Diego P-C Region. The Western San Diego P-C region has less than 10 years of remaining permitted reserves. According to the Temescal Valley Area mineral land classification report completed in 1991 (CGS, 2007), the Temescal Valley's permitted reserves are expected to last through 2028. This area has been responsible for supplying aggregate to adjacent markets, such as Orange County, Los Angeles County, and San Diego County, due to the low availability of aggregate supplies in those counties. Because the reserves in the Project vicinity are anticipated to be used to meet local construction needs plus meet the needs of other P-C regions in Southern California, the demand for reserves within the Temescal Valley is continually increasing and permitted reserves are expected to be depleted at a faster rate than initially reported (Appendix N).

Within Western Riverside County and Northern San Diego County, two reports prepared by CGS estimated that the annual production consumption rates of aggregate are 5.9 and 5.4 tons per capita, respectively. Temescal Valley quarries from northern Lake Elsinore to Corona have been producing aggregate for areas that lack sufficient supply to satisfy demand. These areas include Orange County, San Diego County, Los Angeles County, and western Riverside County. In all of these consumption areas, supplies have continued to decrease as demand has increased. Orange County has exhausted most of its aggregate resources, and demand within Orange County is being met by sources in neighboring areas, such as Temescal Valley.

Table 3.9-3 presents the 5 and 10 year incremental increases in population in the market area of the Proposed Project through 2050.

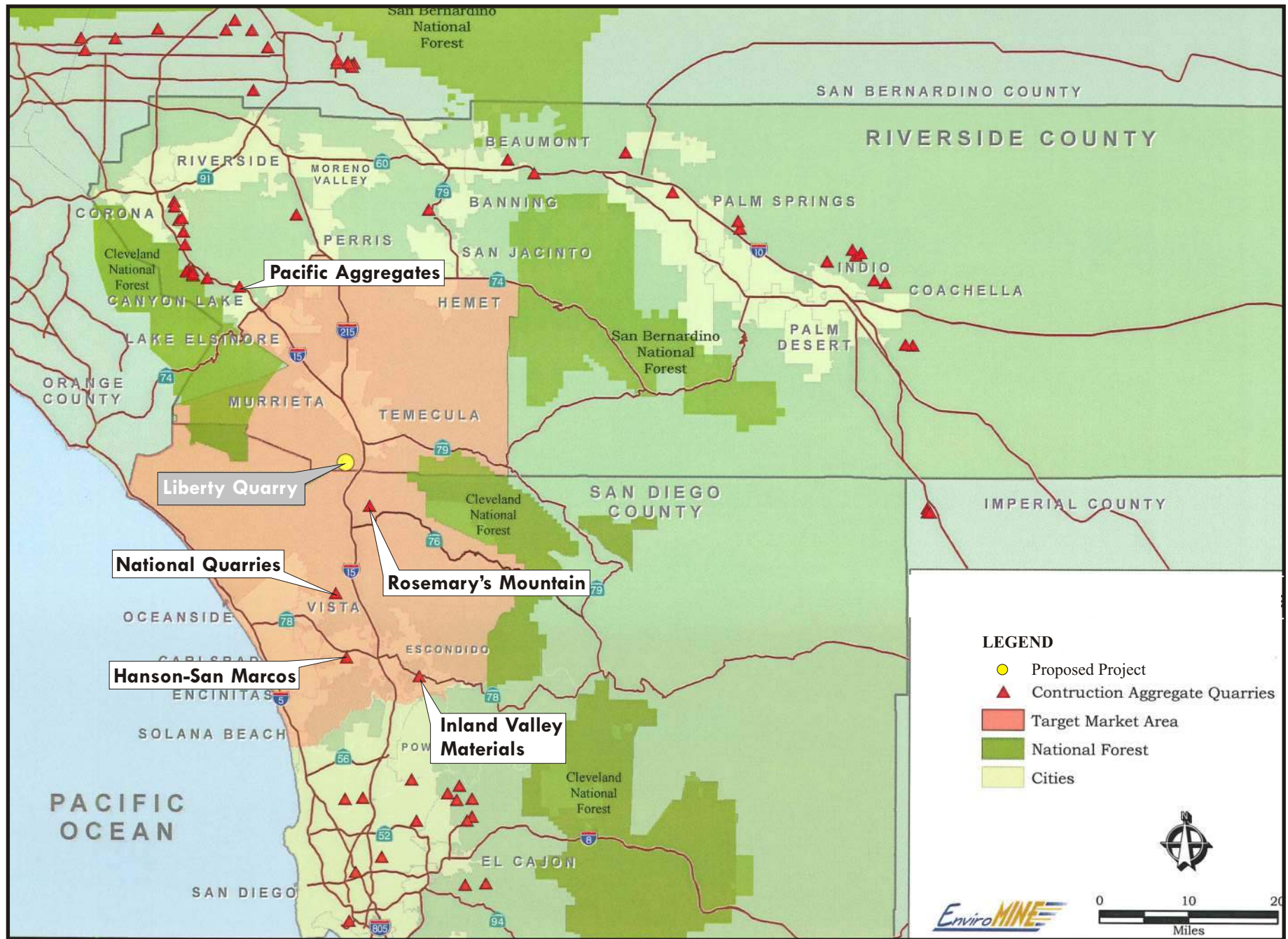
TABLE 3.9-3
Project Vicinity Area Population Projections
Liberty Quarry Environmental Impact Report, Riverside County, California

Population (millions)	2005	2010	2020	2030	2040	2050
Southwestern Riverside County	0.49	0.59	0.72	0.84	0.92	1.01
Northern San Diego County	0.81	0.88	0.99	1.08	1.19	1.31
Total	1.30	1.47	1.71	1.92	2.11	2.32

Source: San Diego Association of Governments (SANDAG), Western Riverside Council of Governments (WRCOG), and California Department of Finance, 2007.

According to population projection estimates, the populations of southwestern Riverside County and northern San Diego County are expected to exceed 2 million people by 2050, which represents an 80 percent increase from 2005. As a result, the area will also see an 80 percent increase in construction aggregate demand, rising from almost 9 million tons a year in 2005 to nearly 16 million tons in 2050.

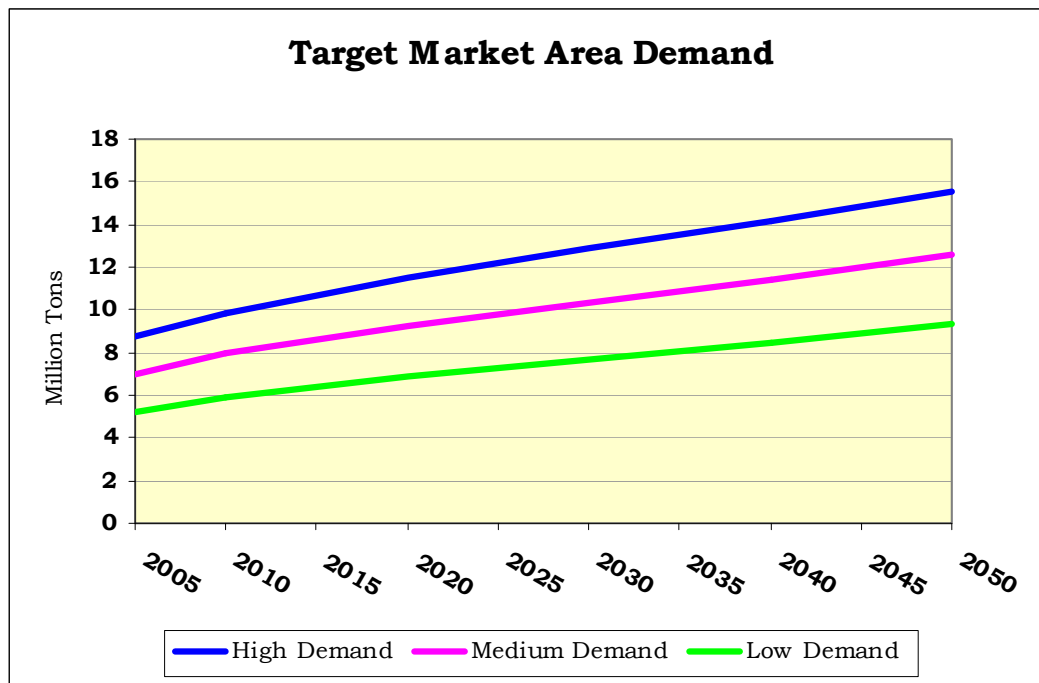
Figure 3.9-2 shows the combined population of southwestern Riverside County and northern San Diego County (referred to as the target market area) and compares that



Proposed Project Vicinity Target Demand

projected population with the high, medium, and low ranges of demand for aggregate in the target market area. Southwestern Riverside County and northern San Diego County are among the fastest growing areas in Southern California. Both Murrieta and Temecula recently surpassed a population of 100,000. As development continues, the demand for construction aggregate similarly increases. The estimated annual demand for aggregates based on projected population in the area is approximately 12.5 million tons (MT) by 2050. The region's projected 50-year demand for aggregate outpaces the permitted local reserves (CGS, 2006, and EnviroMINE Inc., 2007 [Appendix N]). Quarries in the market area have limited production capacity and are not able to meet the growing demand in this area.

Figure 3.9-3 displays the projected aggregate demand through 2050 for the target market area in the vicinity of the Proposed Project, according to the level of per capita consumption.



Source: EnviroMINE Inc., 2007

FIGURE 3.9-3
Target Market Area Demand
Liberty Quarry Environmental Impact Report
Riverside County, California

Aggregate Transport Costs Relevant to Market Location

Cost of Hauling. One of the major cost components of delivering aggregate to market is the cost of transportation from the source to the end user. Construction aggregate is a low-unit-value, high-bulk-weight commodity; the greater the haul distance, the more expensive the final cost to the end user. Therefore, transportation cost is the main factor that defines a quarry's market area. Conversely, a quarry located closest to the areas in which the aggregate will be used will reduce adverse impacts that accompany longer hauling distances and reduce the cost of transport (Berck, 2005). In addition to keeping the cost of the material low for consumers, locating an aggregate facility near the market they serve will reduce fuel consumption, air pollution, traffic congestion, and road maintenance costs

(Clinkenbeard, 1999). Because the cost of transporting aggregate material can quickly exceed its value, transportation costs have been the main factor in defining a market area for a quarry.

Shipping costs for aggregate can typically exceed production costs if the material is trucked more than approximately 20 miles from the source to the end-use location. Thus, by locating a quarry near its market area, the distance the material must be shipped is reduced and the cost is lower for the consumer. In addition, decreasing the distance aggregate is transported will result in other economic and environmental benefits (CGS, 2006). These benefits include reductions in fuel consumption, air pollution, traffic congestion, and road maintenance costs.

Southern California Transportation Costs. For a straight, flat haul with minimal traffic, the cost of transporting construction aggregate in Southern California is approximately \$0.15 per ton mile (Map Sheet 52, 2006). In major metropolitan areas, this rate can increase to \$0.25 per ton mile because of heavy traffic, tolls, poor road conditions, and steeper road grades. Coarse aggregate averages \$12 per ton in the Southern California market. Assuming transportation costs range from \$0.15 to \$0.25 per ton-mile the cost of aggregate could more than double if it is shipped 50 to 80 miles from Coachella Valley to San Diego County.

Throughout Southern California, aggregate haul distances have been gradually increasing as local sources of aggregate diminish and urban development expands around existing and former mine areas. Most of the existing aggregate sources in the metropolitan areas of Los Angeles County, Orange County, and San Diego County are closed, have limited reserves, or lack the area to expand. To meet the demand for aggregate in the Southern California area in the context of diminished sources, aggregate producers are actively pursuing other options to obtain needed materials, including expanding existing sites, permitting new sites, and transporting material from distant sources in Riverside and San Bernardino counties. The locations of existing resources are typically in less developed outlying areas or historical mining areas such as the Temescal Canyon, Lytle Creek, Upper Santa Ana Wash, Cabazon-Banning, northern Coachella Valley, and scattered areas in San Diego County.

According to Caltrans (2007), additional aggregate sources that reduce the material hauling distance would have the following benefits: reduction in emissions from trucks; reduction in costs of materials; reduction of pavement deterioration; reduction in construction project costs.

3.9.3 Standards of Significance

Criteria for determining the significance of impacts associated with mineral resources have been developed in accordance with Appendix G of the CEQA Guidelines and threshold considerations established by Riverside County. For the purposes of this EIR, the Proposed Project would have a significant impact on mineral resources if it would:

- 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.

3.9.4 Methodology

Impacts to mineral resources are analyzed in the context of the existing state, county, and local plans and policies information available for the Site, which includes historical information, relevant studies and reports, field verification studies, and onsite field surveys. Potential impacts to mineral resources were evaluated, based on the identified standard of significance, to determine whether the Proposed Project is consistent with existing plans and policies.

3.9.5 Impacts and Mitigation Measures

Impact MIN-1: The Proposed Project could 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.

Impact: No impact.

The Proposed Project's market area was identified as feasible on the basis of the existing transportation networks, population centers, expected demand, and locations of other existing quarries (see Figure 3.9-2). Implementing the Proposed Project would result in the ability to supply materials within southwestern Riverside County and north to approximately the southern portion of Lake Elsinore (about 15 miles north along Interstate 15 (I-15) and 25 miles north on Interstate 215 (I-215) to about State Route (SR)-74. This area includes Temecula, Murrieta, French Valley, southern Hemet, and southern Perris. Near Lake Elsinore and further north of SR 74, the existing suppliers in northern Lake Elsinore and the Temescal Valley (the Glen Ivy Hot Springs-Tom's Farm area) would be closer to the market area than the Proposed Project. These areas would have a price advantage because of the transportation distances. The Perris and Hemet area would also be the point where aggregates currently transported from the Temescal Valley, Corona, Banning, Cabazon, and San Bernardino would have a competitive transportation advantage.

The northern San Diego County submarket, which includes the areas of Fallbrook, Escondido, Vista, Oceanside, and Carlsbad, would also be partially supplied by the Proposed Project because existing aggregate production in this area is well below the demand. Materials are currently being exported to San Diego from quarries located in Corona and San Bernardino, and even as far as Irwindale and the Coachella Valley. This means trucks must travel along I-15, I-215, and SR-79 (Winchester Road) to deliver aggregate to the target market area. Considering the locations of existing suppliers in southern San Diego County, the market area for the Proposed Project is expected to extend approximately 25 miles south to Escondido and SR-78.

As shown on Figure 3.9-2, the shaded market area is nearly devoid of construction aggregate quarries. Few of the quarries are relatively close to the Temecula-Murrieta area and northern San Diego County. Aggregate companies have attempted to permit many quarry sites in this market area over the past 20 years. Except for Rosemary's Mountain in northern San Diego (which took 23 years to permit and has limited production and reserves), those attempts have been denied, or approved permits have been allowed to expire because of high start-up costs for improvements and mitigation.

The Proposed Project would have regional benefit by displacing some of the existing truck traffic currently hauling aggregate to the market that the Proposed Project would serve.

These benefits include reductions in fuel consumption, aggregate costs, air pollution, GHG, and road maintenance costs. A study was completed in 2006 that analyzed the question of how many trucks would be displaced by the proposed quarry. The study was completed by Urban Crossroads (Appendix K-1) and found that the presence of the Proposed Project would reduce aggregate product travel on I-15 in Riverside County by a net of 16.5 million miles per year (net of truck traffic displaced plus Proposed Project truck travel). If all the potential truck traffic displacement occurs, as shown in Table 3.2-28, the net annual NO_x and ROG emissions would be reduced to less than existing levels, and a net benefit to regional air quality would occur. This is discussed in more detail under Offsite Emissions in Section 3.2.3.2.

Granite is requesting an SMP in the area identified as an MRZ-2a (see Section 1.1). (“MRZ-2 are areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists” [California Division of Mines and Geology, 1998]). Other identified MRZ-2a areas are located north of Lake Elsinore, within Temescal Canyon, from Glen Ivy to Corona, and in the City of Corona southeast of the intersection of I-15 and SR-91. These potential sources of aggregate materials include approximately 10 active mine sites that supply southwest Riverside County and northern San Diego County; they are a main source of aggregate for Orange County and are located approximately 22 to 38 miles north of the Site. The Proposed Project would contribute 270 MT or 12 percent of the 2.286 billion tons of aggregate reserves needed in the San Diego County and western Riverside County markets over the next 50 years. As of 2005, the San Diego and western Riverside County area had less than 25 percent of the permitted aggregate reserves needed to meet the projected 50-year demand. (CGS, Map Sheet 52, 2006).

According to the CGS (CGS, 2006), San Diego County construction-aggregate production in 2005 was approximately 10 MT, and construction aggregate demand exceeded 16.5 MT, which results in a shortfall of 6.5 MT. Because of the limited and diminishing number of active quarries in San Diego County, construction aggregate production in the county is anticipated to continue to diminish during the next several decades. In the last 20 years, only one new quarry has been permitted (Rosemary’s Mountain Quarry). Several other quarries have had their permits extended, but their resources will eventually be depleted and new quarry sites are needed to meet the future demand. Imports into San Diego County have been reported to come from Imperial, Los Angeles, Riverside, and San Bernardino counties, as well as Mexico. According to a traffic survey conducted in 2006, more than 1,000 aggregate haul trucks crossed the Riverside–San Diego County border in a single day.

As shown in Table 3.9-4, the reserves that would become available with implementation of the Proposed Project would contribute (separate from other sources) 270 MT of construction aggregate. Even with this contribution the region will have a construction aggregate deficit of 450 MT at the low-demand estimate and a deficit of 2.03 billion tons at the high-demand estimate. Under the high-demand scenario, 7.5 quarries the size of this Proposed Project would need to be added to the market to satisfy demand. Even under the low-demand scenario (in which demand could be affected by an economic downturn), two additional sites of similar size and production capability would still be necessary to satisfy the lower level of anticipated demand.

TABLE 3.9-4
Proposed Reserves versus Satisfied Demand
Liberty Quarry Environmental Impact Report, Riverside County, California

	Total Aggregate Demand 2007-2050 (MT)	Total Permitted Reserves without Project (MT)	Total Demand without Project (Percent)	Total Permitted Reserves with Project (MT)	Total Demand with Project (Percent)
High	3,915	1,618	41	1,888	48
Medium	3,155		51		60
Low	2,337		69		81

Source: EnviroMINE Inc., 2007

Extensive studies and analyses have been conducted documenting the existing and future need for aggregate resources in the vicinity of the Proposed Project. The underlying assumptions and findings of these studies have been confirmed and supported by state and local decision makers involved in transportation infrastructure planning in California. The following relevant studies and source documents were consulted in defining the existing condition and evaluating impacts.

California Geological Survey. 2002. "Map Sheet 52" In Aggregate Availability in California.
California Department of Conservation. Updated 2006. Map Sheet 52 is a statewide map showing a compilation of data about aggregate availability collected over a period of approximately 28 years, originally published in 2002 and updated in 2006. The purpose of the map is to compare projected aggregate demand for the next 50 years with currently permitted aggregate resources in 31 regions of the state. The map also highlights regions where there is less than 10 years of permitted aggregate supply remaining (red circles). Map Sheet 52 was designed to help local governments with land use planning, especially for future infrastructure needs. The 26-page report that accompanies the map sheet contains information on aggregate resources (production, price, transportation, quality and use, comparison of sand and gravel to crushed stone, and factors affecting aggregate demand). Key findings of the report include the following:

- "Currently, transporting aggregate a distance of 30 miles will increase the Freight on Board (FOB) price by about \$4.50 per ton. For example, to construct 1 mile of a 6-lane interstate highway requires about 113,505 tons of aggregate. Transporting this amount 30 miles adds \$510,000 to the base cost of the material at the mine. In major metropolitan areas, this rate is often greater because of heavy traffic that increases the haul time. Transporting aggregate from distant sources also results in increased fuel consumption, air pollution, traffic congestion, and road maintenance. Moreover, transportation cost is the principal constraint defining the market area for an aggregate mining operation." (page 15)
- "The aggregate study areas with the greatest projected future need for aggregate are the South San Francisco Bay, San Gabriel Valley, Temescal Valley-Orange County, Western San Diego County and San Bernardino. Each is expected to require more than a billion tons of aggregate by the end of 2055." (page 3)

- “Northern San Diego County imports aggregate from the San Bernardino production area and from Temescal Valley.” (page 16)
- “Twenty-five of the 31 aggregate study areas have less than half of the permitted resources they are projected to need.” (page 6)
- “Temescal Valley - Orange County Region (which is the region in which the Proposed Project site is located) has only 32 percent of the permitted reserves needed for the next 50 years.” (Note: “OC’s permitted reserves are nearly exhausted and now the county relies on Temescal Valley for much of its aggregate needs.”) Temescal Valley has less than 16 years of permitted reserves left, assuming no export to San Diego County. (page 13)
- “Western San Diego County Region has only 17 percent of the permitted reserves needed for the next 50 years.” Western San Diego County has less than 9 years of permitted reserves left. (page 13)
- “The Temescal Valley-Orange County Region has lost 58% of its permitted reserves in the last 5 years.” (page 9)
- “Aggregate is hauled from southwestern Imperial County into downtown San Diego, a distance of about 90 miles.” (page 16)

EnviroMINE, Inc., 2007. Southern California Construction Aggregates Market Study. November.

This report analyzes the current and future market condition for construction-grade aggregate in southwestern Riverside and northern San Diego counties and finds that these counties and all of Southern California need additional permitted aggregate reserves to meet infrastructure planning needs (see Appendix N). Specific findings of this report include the following:

- Thirty per cent of aggregate study areas within California have fewer than 15 years of permitted aggregate resources remaining.
- Permitted aggregate reserves within Southern California could be exhausted in less than 20 years if no new sites are permitted.
- Construction aggregate demand is expected to increase up to 80 percent within the target market area for the Proposed Project between 2005 and 2050, where supply will decrease by 85 percent if no new sites are permitted.
- The target market area and Southern California would benefit from additional permitted reserves, such as those proposed from the Proposed Project.
- If the Proposed Project is permitted at 5 million tons per year (MTPY), the target market area would still experience on average 7.3 MTPY of unmet demand from 2005–2050.
- Permitting aggregate reserves near their source of demand will reduce transportation costs, greenhouse gasses, road maintenance costs, traffic congestion, and fuel consumption.
- The largest producer of aggregates in northern San Diego County, Hanson-San Marcos (which produces 2 MTPY), closed in February 2008.

- Substantial quantities of aggregate are imported into the target market area from all areas of Southern California including: Palm Springs/Coachella Valley, San Bernardino County, Los Angeles County, and Temescal Valley.
- Rising transportation costs and increased congestion on local roads has led to a significant increase in delivered costs for aggregate.

Husing, John. 2007. Economic Impact on Riverside County and Its Southwestern Area: Liberty Quarry. February. This report explores the total economic impact of the Proposed Project, including the primary, secondary, and tax revenues injected into the local and state economies. In California, the construction aggregate industry contributes nearly \$2 billion annually to California's economy. Looking specifically at the Proposed Project, the report finds that even before reaching its 5-MTPY peak production in 2021, Liberty Quarry would provide significant positive cash flow to the region and measurable benefits to local residents. The report also finds that the Proposed Project would result in a shorter haul distance to its target market and that the shorter distances to market would reduce the vehicle miles traveled (VMT) on freeways by 16.5 million miles per year. This would reduce the production of five major air pollutants. This reduction could save the California Air Resources Board (CARB) \$27.3 million by helping to reduce targeted truck emissions outlined in the CARB 2006 emission reduction plan (page 26).

California Department of Transportation (Caltrans). 2007. Aggregate Supply: An Economic Assessment. Division of Transportation Planning. February. This report evaluates the costs associated with project delays from aggregate supply shortfalls caused by limited permitted reserves and the costs of hauling aggregate to locations distant from the market area. The report concludes that permitting and expansion of additional construction aggregate supply sources in California suggests benefits and cost savings to the state. The benefits include the following:

- Reduction in emissions from trucks because of a reduction in truck VMT for hauling aggregates.
- Shorter hauling distances, reducing truck VMT and, therefore, the cost of the aggregate to the end user.
- Reduction of pavement deterioration because of lower truck VMT.
- Reduction in project delays caused by a lack of aggregate supply in the area, which leads to increased project costs.
- Reduction in truck VMT would also reduce traffic congestion and potentially reduce traffic accidents on roads.

Berck, Peter. 2005. A Note on the Environmental Costs of Aggregates. Working Paper No. 994. Department of Agricultural and Resource Economics and Policy, University Of California at Berkeley. January. This working paper demonstrates that the most likely effect of a new aggregate site is to reduce truck VMT for aggregate hauling, because the new site would reduce hauling to distant markets and reduce associated environmental impacts (e.g., air quality impacts).

Correspondence and Presentations

- **Will Kempton/California Department of Transportation, Director. Correspondence to local transportation agencies, February 2006 and September 2008.** This correspondence reiterates the need for development of new aggregate sources to meet anticipated demand from planned infrastructure construction projects and highlights the possible adverse fiscal impacts to state and local transportation planning bodies from a shortfall of permitted aggregate supplies.
- **Jim Bourgart/State of California Deputy Secretary for Transportation and Infrastructure. Correspondence to Honorable John F. Tavaglione, Chair of the Riverside County Board of Supervisors, June 2007.** This correspondence highlights the need for new permitted aggregate reserves to meet the anticipated transportation construction under the approved Governor's Strategic Growth Plan. The plan calls for \$222 million to be used for California infrastructure improvements over the next 10 years.
- **Parrish, John. 2007. *Aggregate Supply and Demand*. Presentation by Dr. John Parrish/California State Geologist at the California Construction and Industrial Materials Convention, Napa, California, March 27.** The following key points summarize the findings in Dr. Parrish's presentation:
 - Construction aggregate is the most important mineral commodity produced in California.
 - Construction aggregate cannot be economically imported and distributed, is used in all 58 counties, is produced in all counties except San Francisco County, and is the cheapest commodity produced per unit volume with the highest overall value of any commodity mined in California.
 - Construction grade aggregates have their best value when they are consumed near their place of production due to low unit value and high bulk weight. Market regions have changed and aggregate is hauled longer distances as local sources are exhausted.
 - Increasing demands for a dwindling supply of construction grade aggregates as California's population grows will result in higher market prices for aggregate commodities. This will result in higher project costs for all types of construction.
 - In the next 50 years, California is projected to need over 13.5 billion tons of aggregate. This figure does not account for accelerated construction programs as a result of major bond initiatives or earthquakes.

Classification of land within California takes place according to a priority list that was established by the State Mining and Geology Board (SMGB) in 1982, or when the SMGB is petitioned to classify a specific area. The SMGB has also established Mineral Resources Zones (MRZ) to designate lands that contain mineral deposits (see Section 3.9.2.1). The state of California has also classified Aggregate Mineral Resource areas within Riverside County. In 1991, the California Geological Survey conducted an evaluation of western Riverside County and, as a result, classified the Site as MRZ-3a, containing a likely deposit of mineral resources. In 2007, the evaluation was further refined and the Site was reclassified as MRZ-2a for the presence of a significant deposit of construction-grade Portland cement concrete (PCC).

The *Riverside County General Plan* identifies mineral extraction as an important component of the Riverside County's economy. Riverside County has extensive deposits of clay, limestone, iron, sand, and aggregates. The Riverside County Zoning Code states that a "Mining operation that is subject to the California Surface Mining and Reclamation Act of 1975 is a permitted use provided that the operator thereof holds a permit to conduct surface mining operations issued pursuant to County Ordinance No. 555, which has not been revoked or suspended" (Riverside County Zoning Code, Article 5, Section 5.1. [a][15]).

The Proposed Project would develop a mineral resource and meet the demand described in Section 3.9.2.2 (Existing Conditions). The Proposed Project is consistent with SMARA and the implementation of Riverside County Ordinance No. 555, which declare that the extraction of minerals is essential to the economic well-being of the state and the county, respectively. Ordinance No. 555 states that the production of minerals will be encouraged while giving consideration to recreational values, environmental values, and public health and safety.

Mitigation: None required.

