

4.1.6 AGRICULTURAL AND AGGREGATE RESOURCES

Portions of the following section have been summarized from the GPA/ZC 589 prepared for the County of Orange Planning and Development Services Division (County of Orange, 2004); therefore, GPA/ZC EIR 589 is incorporated by reference herein.

4.1.6.1 Agricultural Resources

To provide a context for the agricultural discussion, according to the California Farm Bureau Federation, in 2003 Orange County was ranked 24th in the state for value of agricultural production. This is a decrease from 2002 when Orange County was ranked 19th in the state. The top five crops by value in 2003 were nursery stock and cut flowers (\$214.2 million), strawberries (\$58.4 million), avocados (\$19.5 million) peppers (\$7.4 million) and green beans (\$4.5 million). When all economic factors are considered, including payroll, purchase of goods and transportation, agriculture has a total value to the local Orange County economy of \$1 billion.

The Orange County Agricultural Commission (<http://www.ocagcomm.com>) provides an historical perspective on the number of acres and overall value of agricultural production in Orange County over the past 20 years. Tables 4.1.6-1 and 4.1.6-2 show the number of acres and production levels in Orange County in 1984, 1994, and 2004.

**TABLE 4.1.6-1
ACRES OF AGRICULTURE PRODUCTION IN ORANGE COUNTY**

Crop	1984	1994	2004
Field	8,912	38,843	22,955
Tree Fruit and Berry Crops	10,438	4,521	3,962
Vegetables	11,358	6,917	2,011
Total	30,708	50,281	28,928

Source: http://www.ocagcomm.com/ser_crop2004_acreage.asp

**TABLE 4.1.6-2
GROSS VALUE OF AGRICULTURAL PRODUCTION IN ORANGE COUNTY**

Crop	1984	1994	2004
Animal Industry	\$2,251,900	\$1,828,600	\$305,570
Apiculture	\$344,700	\$17,300	\$95,595
Field	\$1,260,900	\$1,910,700	\$1,116,608
Nursery	\$124,145,500	\$127,988,400	\$211,438,660
Tree Fruit and Berry Crops	\$95,243,300	\$40,539,700	\$62,379,756
Vegetables	\$46,568,200	\$45,975,900	\$18,226,782
Total	\$269,814,500	\$218,260,600	\$293,562,971

Source: http://www.ocagcomm.com/ser_crop2004_acreage.asp

County of Orange

The County of Orange General Plan Open Space (5) land use designation permits agriculture. The Land Use Element states, "The Open Space (5) category indicates the current and near-term use of the land, most of which is zoned agricultural. It is not necessarily an indication of

long-term commitment to open space use.” Within both the SAMP Study Area and unincorporated Orange County, the majority of land designated Open Space (5) is located within the RMV Planning Area. Agricultural and grazing activities within the RMV Planning Area are addressed later in this chapter. Additionally, a portion of the Foothill/Trabuco Specific Plan Area and two locations with Caspers Regional Park are designated Open Space (5).

City of Dana Point

The City of Dana Point does not designate any land specifically for agricultural use. There is no land in Agricultural Preserves within the City.

City of Laguna Hills

The City of Laguna Hills does not designate any land specifically for agricultural use. There is an Open Space designation on the City General Plan. The primary purpose of this land designated Open Space is for the preservation of environmental resources, aesthetic attributes, and the protection of public health and safety. The General Plan does not identify any Agricultural Preserves within the City.

City of Laguna Niguel

The City of Laguna Niguel does not designate any land specifically for agricultural use. There is an Open Space designation on the City General Plan. This designation is primarily intended for passive recreation, visual enhancement, or resource conservation. There is no land in Agricultural Preserves within the City.

City of Mission Viejo

The City of Mission Viejo does not designate any land specifically for agricultural use. The City General Plan has a Recreation/Open Space designation; however, this designation is oriented toward providing for active and passive recreation and the protection of natural resources. There is no land in Agricultural Preserves within the City.

City of Rancho Santa Margarita

The City of Ranch Santa Margarita does not designate any land specifically for agricultural use. There is an Open Space designation on the City General Plan. This designation is primarily intended for recreation or resource conservation. Within the City’s Sphere of Influence¹, there is an area designated on the General Plan for Future Planned Community. This area, located east of the Plano Trabuco Road/Trabuco Canyon Road intersection, is currently used for agriculture. This area is within the Foothill/Trabuco Specific Plan Area and is designated for residential development in the Foothill/Trabuco Specific Plan. A development proposal has been submitted to the County of Orange for approximately 90 acres of this area. There is no land in Agricultural Preserves within the City.

City of San Clemente

The City of San Clemente does not designate any land specifically for agricultural use. There are five Open Space designations on the City General Plan. The principal uses for these Open

¹ A sphere of influence designates a jurisdiction’s probable future physical boundary and service area. Therefore, the City General Plan designates an anticipated land use for an area that is not currently within the City’s boundary. An annexation of the area would be required before it would become part of the City.

Space designations include parks, passive recreation, resource management, and golf courses. The General Plan does not identify land in Agricultural Preserves within the City.

City of San Juan Capistrano

The City of San Juan Capistrano General Plan Land Use Element (May 7, 2002) Industrial land uses designations include designation 4.2: Agri-Business. The Agri-Business designation allows for the production and sale of agricultural crops, including field and row crops, orchards and vineyards, nurseries, greenhouses, and hydroponic gardens, as well as animal breeding, boarding, raising, and training. The General Plan Land Use Element identifies 74 acres for Agri-Business land uses. None of this land is within an Agricultural Preserve.

RMV Planning Area

Portions of the RMV Planning Area are used for a variety of agricultural uses, including crops, orchards, nursery stock, and grazing. These resources are discussed further below.

Crops

Agricultural operations have been ongoing on the RMV Planning Area for over 120 years. The RMV Planning Area had the largest wheat and barley fields, as well as rows of black-eyed peas and sugar beets in Orange County during the late 1880s through the 1920s. Also, for some time after the 1960s, the agricultural land was used to produce grain crops.

Today, some parcels of the RMV Planning Area are being cultivated to produce lemons and avocados. There are currently 398 acres of lemon orchards and 32 acres of avocado orchards. Of these 430 acres used in production of lemons and avocados, a total of 354 acres are on lands designated as Important Farmland (see discussion of Important Farmland below). The locations of the existing orchards, as well as row crops, barley fields, and irrigated pastures, are depicted on Figure 4.1.6-1. The success of the lemon orchards has allowed Rancho Mission Viejo to become the largest producer of lemons in Orange County. In 2001, Rancho Mission Viejo's orchards produced an estimated 5,702 tons of lemons. This increased to 6,233 tons of lemons in 2002, 8,103 tons in 2003, 5,427 tons in 2004, and 8,550 tons in 2005. The increased number reflects an increased yield, as well as more acres in cultivation. In 2005, the avocado orchards produced 7,500 pounds of salable crop.

The lemon orchards were planted in three groups: 1979, 1992 to 1995, and 1998 to current. The avocado orchards were planted between 2001 and current. In general, lemon orchards are commercially viable for up to 28 years and are productive at the end of their second year. After this period of time production is not always sufficient to be economically viable. Avocados start bearing fruit in limited amounts after three years and are considered mature between six and seven years of age. Avocado trees are generally commercially viable for approximately 30 years.

Additionally, Rancho Mission Viejo usually plants between 800 and 1,000 acres of barley in several locations north of Ortega Highway. In 2003, 886 acres of barley were planted, and 950 acres of barley was planted in 2004. The 2005 crop has not been planted yet. The fields are not irrigated and levels of production are inconsistent dependent on weather conditions (i.e., amount of rainfall). This limited barley crop primarily serves as feed for Rancho Mission Viejo cattle. In years where the crop produces more than is needed for Rancho Mission Viejo cattle, the excess is sold to other local agricultural operations. The amount of revenue from the sale of excess is minimal; therefore, barley sales are not considered toward agricultural revenue.

In 2003, an approximately 52-acre parcel located at the northwest quadrant of the Ortega Highway and La Pata Avenue intersection was cultivated with green beans. This site is designated as Prime Farmland. This site was previously a pasture. It is anticipated that this field will continue to be planted with a variety of row crops until it is developed pursuant to the RMV Proposed Project.

Infrastructure used to serve the agricultural operation, namely citrus and avocado production and limited irrigated pasture (horse grazing), includes mainline water lines, irrigation systems, and ranch roads. With the exception of Cristianitos Road, all of the ranch roads are graded dirt roadways. Verdugo Road is a gravel surface road.

Nurseries

Rancho Mission Viejo leases land to commercial nurseries for landscape and greenhouse production. Table 4.1.6-3 lists the nurseries within the RMV Planning Area, the size of the operation, type of production, and the end date of the lease.

**TABLE 4.1.6-3
NURSERY LEASES ON THE RMV PLANNING AREA**

Leaseholder	Size of Lease	Type of Production	Lease Expiration
Tree of Life Nursery	35 acres	Wholesale nursery	Renewed yearly in July
Color Spot Nursery	243.7 acres	Wholesale nursery	December 31, 2006
DM Color Express Nurseries	29.4 acres	Wholesale nursery	monthly
Miramar Wholesale Nurseries	17 acres	Wholesale nursery	monthly
Source: Rancho Mission Viejo, 2003.			

Presently, there are approximately 325 acres used by commercial nurseries on the RMV Planning Area. The nursery stock is grown in containers rather than in the ground plantings. According to the Orange County Farm Bureau, nursery stock and cut flowers is the number one crop in Orange County by value. The estimated value for 2002 was \$232.1 million. The estimated value of the container plants is between \$50,000 and \$100,000 per acre.

Ranching Operations

Historically, the RMV Planning Area supported several thousand head of cattle. In recent years, there has been an average of 500 head of cattle that graze on the approximately 19,100 acres of pasture located within the RMV Planning Area boundary. Within the RMV Planning Area, approximately 86 percent of the area is designated as Grazing Land as part of the California Department of Conservation Farmland Mapping and Monitoring Program. This acreage constitutes 52 percent of the lands designated for grazing in Orange County.

Historically, the RMV Planning Area had 22 designated pasture areas for grazing of cattle. Currently, only 11 pastures within the Planning Area are being used. These pastures are depicted in Figure 4.1.6-2. In addition, there are several irrigated pastures in the vicinity of San Juan Creek (Figure 4.1.6-1). The following provides a brief overview of the characteristics of each pasture.

- **Chiquita and Lower Chiquita Pasture.** These two areas are currently being grazed as one pasture. Other agricultural operations, in the form of citrus, avocados, and barley fields, are also carried out in this area. Cattle are excluded from the agricultural

production areas. Water is provided by cattle trough and via Chiquita Creek. The troughs are filled by pipeline.

- **Vineyard Pasture.** Located within the valley floor of the Gobernadora Sub-Basin, the pasture is enclosed by four-strand barbed wire fence. Barley is often grown in the alluvial valley of this pasture. Annual grasslands are also used for grazing. The internal fencing keeps the cattle out of GERA. Cattle troughs and Gobernadora Creek provide water to the pasture.
- **River Pasture.** This pasture straddles San Juan Creek. There are agricultural activities (barley) within this area. Water is provided via San Juan Creek and water troughs when the creek is dry.
- **Bull Pasture.** Located west of Gobernadora Creek, the pasture is enclosed by four strand barbed wire fence. Barley is often grown in the alluvial valley of this pasture. Annual grasslands are also used for grazing. A cattle trough provides water to the pasture.
- **Lower Gobernadora.** Located south of Bull Pasture, this area shares fencing with the adjacent pasture areas. Barley is often grown in alluvial valley of this pasture. Annual grasslands are also used for grazing. The internal fencing keeps the cattle out of GERA. Cattle troughs provide water to the pasture.
- **South 40 Pasture.** This pasture is located south of Ortega Highway. Barley is grown on the lower elevations in this area. Annual grasslands are also used for grazing. Water is provided via water troughs.
- **Gabino.** This pasture is located in the eastern portion of the SAMP Study Area. Water is provided via Jerome's Lake, water troughs, and Gabino Creek (when water is available).
- **Cristianitos.** Located south of Ortega Highway and east of Cristianitos Road, this pasture does have limited agricultural areas. Lemons and avocados are grown in the southeastern portion of this pasture. Fencing is used to keep the cattle from the adjacent pastures and out of the citrus areas. Water is provided via three defunct mining ponds and water troughs.
- **Rinconada.** This pasture is located south of Ortega Highway and east of the Sierra Pasture. Fencing keeps the cattle from the roadway, the adjacent landfill, and the Donna O'Neill Land Conservancy to the south. This area is disturbed from the Oglebay Norton Industrial Sands (ONIS) operation. No agricultural activities are located in this area. Water is provided via troughs and the mining pond associated with ONIS.
- **Sierra.** Sierra is located south of Ortega Highway and east of La Pata Avenue. Fencing separates this pasture from the roadways and the Prima Deshecha Landfill. Cattle are also excluded from the Ranch House area. Water is provided via water troughs.

Cattle are rotated between the pastures taking into account available water, forage productivity, and a desire to maintain an average of 25 percent residual dry matter for natural pastures. Generally, the cattle are grazed in the natural southern pastures (South 40, Sierra, Rinconada, Cristianitos, Gabino, and Talega) from October to May. In late May or early June, the cattle are moved to the northern pastures. This allows the pastures a fallow period and the cattle are able to benefit from the areas planted with barley.

Farmland Classification

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland. The maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources.

For Prime Farmland or Farmland of Statewide Importance, the soil must meet the physical and chemical criteria as determined by the United States Department of Agriculture Natural Resources Conservation Service (NRCS). NRCS compiles lists of which soils in each survey area meet the quality criteria. Factors considered in qualification of a soil by NRCS include:

- Water moisture regimes, available water capacity, and developed irrigation water supply
- Soil temperature range
- Acid-alkali balance
- Water table
- Soil sodium content
- Flooding (uncontrolled runoff from natural precipitation)
- Erodibility
- Permeability rate
- Rock fragment content
- Soil rooting depth

Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are collectively defined as "Important Farmland." Grazing lands are also considered farmland, though are not included as Important Farmland. The use of the grazing lands for ranching activities is discussed below. The following identification of the farmland classifications is excerpted from the California Department of Conservation Office of Land Conservation, "A Guide to the Farmland Mapping and Monitoring Program."

- ***Prime Farmland (P)***. Prime Farmland is land, which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

- **Farmland of Statewide Importance (S).** Farmland of Statewide Importance is land other than Prime Farmland, which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops within the last three years. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.
- **Unique Farmland (U).** Unique Farmland is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance. It must be currently used for the production of specific high economic value crops (as listed in the last three years of California Agriculture produced by the California Department of Food and Agriculture). It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agriculture use.
- **Farmland of Local Importance (L).** Farmland of Local Importance is either currently producing crops, or has the capability of production. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity.
- **Grazing Land (G).** Grazing Land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. The minimum mapping unit for Grazing Land is 40 acres. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Urban and Built-up Land (D).** Urban and Built-Up Land is used for residential, industrial, commercial, construction, institutional, public administrative process, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as a part of Urban and Built-up Land, even though they are associated with agriculture.
- **Land (X).** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Land.

Based on a review of the 2004 Orange County Important Farmland map, prepared by the California Department of Conservation, the SAMP Study Area contains approximately 1,502 acres of Important Farmland. Table 4.1.6-4 provides a breakdown of the number of acres of classified farmland types within the SAMP Study Area, RMV Planning Area, Orange County, and Statewide. As shown in the table, the SAMP Study Area contains approximately nine percent of the Important Farmland in Orange County and approximately two one-hundredths of a percent of the Important Farmland statewide. Figure 4.1.6-3 depicts the locations of Important Farmland within the SAMP Study Area.

**TABLE 4.1.6-4
SAMP STUDY AREA FARMLAND BY CLASSIFICATION**

Farmland Classification	Acres within SAMP Study Area ^a	Acres within the RMV Planning Area	Acres within Orange County	Acres Statewide
Prime Farmland	478	319	10,127	4,784,390
Farmland of Statewide Importance	57	61	763	2,383,024
Unique Farmland	967	576	6,063	1,224,328
Farmland of Local Importance ^b	0	0	0	3,036,514
Grazing	27,368	20,016	37,964	13,553,757
a. These figures represent the farmland designations in Orange County. Within the SAMP Study Area there are 12,308 acres within Riverside County that are designated Other. This area represents the Cleveland National Forest area. b. Orange County has not designated any farmland as being locally important.				

Williamson Act

In 1965, the state enacted the California Land Conservation Act, more commonly known as the Williamson Act (Government Code Section 51230 et seq.). The Williamson Act was adopted as a means of encouraging the preservation of the state's agricultural lands. As a means to implement the act, a land contract is established, whereby the County Board of Supervisors or City Council stabilizes the taxes on qualifying lands in return for an owner's guarantee to keep the land in agricultural preserve status for a 10-year length of time. Each year, on the anniversary date of the contract, the contract is automatically renewed unless a notice of nonrenewal is filed.

In 1969, an agricultural preserve boundary for the RMV Planning Area was established that encompassed 36,619 acres. Since the date of execution of the original Williamson Act contract agreement, approximately 26,779 acres have been removed from the agricultural preserve because they were subsequently identified as exceptions to the land conservation agreement, were added to O'Neill Regional Park, or expired (i.e., notices of non-renewal were filed and the contract was allowed to expire). Currently, 9,840 acres remain within the Williamson Act contract and notices of non-renewal have been filed for all of those acres. Regardless of the RMV Proposed Project, the contract is set to expire on 289 acres on December 31, 2005, 1,733 acres on December 31, 2006, and 7,818 acres on December 31, 2008. Figure 4.1.6-4 depicts the lands within the RMV Planning Area within the agricultural preserve and when the contract obligations for the individual areas are set to expire.

Figure 4.1.6-5 depicts the boundaries of the Agricultural Preserve overlaid on the Important Farmland data for the RMV Planning Area. Within the Agricultural Preserve areas, there are 121 acres of Prime Farmland, 21 acres of Farmland of Statewide Importance, and 12 acres of Unique Farmland.

4.1.6.2 Aggregate Resources

Orange County has limited amounts of mineral resources of sufficient quality and quantity that can be mined commercially. Of particular importance are those mineral resources necessary to meet the County's existing and future development needs, such as construction aggregate. Neither, the local General Plans nor the California Geological Survey identifies other mineral resources in Orange County; therefore, the analysis is limited to aggregate resources.

There are four primary areas within opportunities for mineral resource recovery operations within the SAMP Study Area. These are the Arroyo Trabuco, San Juan Creek, the Oglebay Norton Industrial Sands (ONIS), and Ortega Rock. The San Juan Creek and ONIS facilities are located within the RMV Planning Area. Operations in the San Juan Creek are no longer active. ONIS is an ongoing operation south of Ortega Highway and east of the Prima Deshecha Landfill. The Arroyo Trabuco area is located to the west of the RMV Planning Area. Activities ceased in 1997. The Ortega Rock facility is located in Lucas Canyon northeast of the RMV Planning Area. This facility has also produced aggregate resources under a Sand and Gravel Site Permit issued by the County of Orange. Current production has been deferred pending site maintenance and production studies, but the facility is capable of resuming and increasing as development within the RMV Planning Area occurs.

In 1994, the California Department of Conservation, California Geological Survey, published an updated report identifying significant sand and gravel resources for the Orange County region. These resource areas are located in portions of the Santa Ana River, Santiago Creek, San Juan Creek, the Arroyo Trabuco and other areas. The specific mineral areas classified and designated are indicated as “resource sectors.” A resource sector is an area judged to contain a significant deposit of construction-quality aggregate that is available, from a general land use perspective, to meet the future needs of the Production-Consumption region. The boundaries of each resource sector generally encompass fairly uniform deposits. For example, sector boundaries would be established between that part of a natural deposit formed on an alluvial fan and that part with the confines of an adjacent modern stream channel and its floodplain. The use of these resource sectors provides a reliable method of estimating the tonnage of material available in each mineral deposit. Table 4.1.6-5 lists the resource areas that have been identified in Orange County.

**TABLE 4.1.6-5
AGGREGATE RESOURCES OF THE ORANGE COUNTY REGION**

Resource Area	Million Short Tons ^a
Santa Ana River ^b	42
Lower Santiago Creek ^b	187
Upper Santiago Creek ^b	26
San Juan Creek	120
Arroyo Trabuco	78
Total	453
a. Includes reserves as well as all potential usable aggregate materials that may be mined in the future. b. Outside of SAMP Study Area	
Source: California Geological Survey Updated Special Report 143, 1994.	

Of the sites identified by California Geological Survey, the Arroyo Trabuco and San Juan Creek site are located within the SAMP study area boundaries. Although resources exist, mining activities ceased in 1997 for both the Arroyo Trabuco and San Juan Creek. Reclamation of the mining areas has been accomplished.

Although not designated by the state as a mineral recovery zone, since 1984, the ONIS site has been a silica sand mining and processing facility located within the boundaries of the RMV Planning Area. Approximately 500,000 tons of silica sand is processed annually for building materials such as stucco, grouts, and mortars, as well as for use in golf courses, playing fields, and playgrounds (source: www.oglebaynorton.com). Exploration and mining of feldspar, clay,

and ancillary minerals and substances also occurs at this location. The facility includes an open pit mine, a large earthen dam and associated reservoirs, a processing plant, office complex, scale house, fueling facility, maintenance shop, several storage buildings, sheds and trailers, and open vehicle/equipment storage areas. This site has a County of Orange Zoning designation of PC, Planned Community and is not identified on the County General Plan as an important mineral resource area.

Ortega Rock is an existing aggregate resource production facility. The County Sand and Gravel Site Permit for this facility covers approximately 126 acres of the 343 acres zoned for sand and gravel extraction. While current production has been deferred pending site maintenance and production studies, the operational lifespan of the quarry is anticipated to extend from 35 to 75 years based on the volume of available material and the estimated rate of extraction (between 400,000 to 1,000,000 tons annually). Ortega Rock is subject to the State Mining and Reclamation Act (SMARA) and the Reclamation Plan for the facility includes a revegetation program that outlines the measures and monitoring strategy to be employed to return the site to a more natural appearance following extraction activities. The ultimate disposition of the site has been predetermined in accordance with the adoption of the Rancho Santa Margarita Planned Community in 1982. The 343 acres that are zoned for sand and gravel extraction are to become a part of Caspers Wilderness Park upon depletion of the mined resource, cessation of mining operations, and implementation of the Reclamation Plan per SMARA. An irrevocable offer of dedication was tendered and agreed to by the County of Orange Board of Supervisors in 1982 for this purpose.

The Ortega Rock site is recognized as one of the most significant permitted mineral resource production sites in the County. Now operating under County Sand and Gravel Site permit number SP 91-072, the site was originally developed in 1962 to provide materials for the construction of Dana Point Harbor. Today, this hard rock quarry is prized for its mineral resource of extremely hard and durable rock that is used for a variety of materials, including subdrain and filter rock, and crushed stone for construction aggregates used in Portland cement concrete and asphaltic concrete. It is the only available quarry in the County to provide large sized hard rock used for rip rap and jetties. It is estimated that the quarry reserves could support production for over 50 years at its approved extraction rates.

There are no other active sand and gravel recovery activities within the SAMP Study Area nor do the cities' General Plans identify significant resources.