



South Livermore Valley Area Plan



South Livermore Valley Specific Plan

## South Livermore Valley Special Study

Prepared for:  
**Alameda County Local Agency Formation Commission**

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# Alameda LAFCO South Livermore Valley Special Study

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## Chapter 1: Introduction

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Generally, the Alameda Local Agency Formation Commission (Alameda LAFCO) uses special studies to encourage local governments to evaluate their current operations and to consider options for reorganization of municipal services. Special studies are intended to provide general information about local governments, and to present alternatives for improving services and reducing operational costs. Alameda LAFCO uses these special studies to seek a balance between the competing needs for affordable housing, economic opportunity, and conservation of natural resources.

This special study has a somewhat different purpose, as specifically directed by the Alameda LAFCO Board. This Special Study's purpose includes providing information to the LAFCO Board that is specific to the South Livermore Valley. This information includes a retrospective review and establishment of current conditions within the South Livermore Valley relative to the following key Alameda LAFCO interests:

- How many acres of land in the Livermore Valley have been annexed to the City of Livermore and/or the City of Pleasanton for residential or urban uses, as compared to data from prior years?
- How many changes in Spheres of influence or municipal service boundary adjustments have occurred in the past?
- How much urban development has occurred within the Livermore Valley pursuant to the goals of the City of Livermore's South Livermore Valley Specific Plan (SLVSP), planning goals and expectations of the City of Pleasanton, and goals and plans of the Alameda County South Livermore Valley Area Plan (SLVAP)?
- What is the status of current vineyard acreage and the number of wineries in South Livermore, as compared to data from prior years, and as compared to County SLVAP goals?
- How many acres of open space and agricultural lands are currently preserved through conservation easements and/or land trusts in South Livermore, as compared to prior years and as compared to the County's SLVAP goals?
- What has been the impact of cannabis cultivation within SLVAP, as related to acreage of cannabis crop production and potential replacement of viticulture croplands?

Since the time that this Special study was originally initiated by Alameda LAFCO, several important events have occurred that provide a re-focus for this Study. In January 2021, the State Water Resources Control Board issued new General Waste Discharge Requirements for Winery Process Water, applicable throughout the state. In June of 2022, the Alameda County Board of Supervisors certified an Addendum to the East County Area Plan EIR, and approved language for a countywide ballot initiative intended to increase the allowable development intensity on agriculturally designated lands in the East County. In November of 2022, that ballot initiative passed, amending Measure D to provide for increased development potential on agriculturally designated lands in the East County. In July of 2022, the Livermore City Council certified an EIR for the South Livermore Sewer Expansion Project, and approved language for a citywide ballot initiative to extend sanitary sewer service beyond Livermore's Urban Growth Boundary, principally to serve residences wine country uses currently relying on on-site wastewater treatment systems. In November 2022, that ballot measure also passed, allowing for the extension of sewer services to permitted uses within the SLVAP planning area.

These relatively recent events will likely have significant influence regarding the future of Livermore Valley. Accordingly, the scope of this Special Study has expanded to provide information that is relevant to Alameda LAFCOs interests, policy positions and procedural requirements relative to the following topics:

- How might the new wastewater disposal requirements of the Water Board's General Waste Discharge Requirements for Winery Process Water (the General Order) affect existing winery operations, and the potential for expansion of wineries in the Livermore Valley?
- How might the City's plans for extended sewer service to new areas affect existing and potential new development?
- How might the City's plans for extended sewer service affect the City/County Urban Growth Boundary, Livermore's existing City boundary and Sphere of Influence, and the City's current municipal service area for sewer service?
- How might the recent changes to Measure D, which increased the permitted floor-to-area ratio (FAR) for potential agricultural development, combined with expanded sewer service, affect vineyard lands within the Valley?
- What other factors that are relevant to Alameda LAFCO's mission might affect the viability of agricultural businesses in the Livermore Valley, and what means and methods might be available to Alameda LAFCO to influence these outcomes?
- What is Alameda LAFCO's role relative to the City of Livermore's proposed sewer expansion project and the City's intent to provide municipal sewer services outside of their established City and municipal service boundaries?
- What are the important policy and procedural implications for Alameda LAFCO, relative to the City of Livermore's proposed sewer expansion project?

Another important event that has occurred since the time this Special Study was initiated is the Tri Valley Conservancy's commission of a study by the University of California at Davis titled, "*Grape Growing and Winemaking in the Livermore Valley, Realizing the Heritage*" (2022), which was prepared by UC Davis Professors James T. Lapsley, Ph.D. and Daniel A. Sumner, Ph.D. This important study provides a definitive, impartial assessment of the economic viability of wine production in the Livermore Valley. It includes context, background, economic reasoning and evidence to help address the potential to maintain and perhaps expand profitable commercial wine grape and wine production in the Livermore region. This Special Study relies heavily on the data generated by *Realizing the Heritage*, and many of the conclusions of this Special Study could not be substantiated without the critical analysis presented in *Realizing the Heritage*. The work of Professors Lapsley and Sumner is heavily cited and sourced throughout this Special Study. Alameda LAFCO staff and their consultants have benefited greatly from their work, and we are grateful for their efforts and the Tri Valley Conservancy's leadership on these issues.

## Chapter 2: Applicable Land Use Plans

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The South Livermore Valley is generally defined as being the level to slightly sloping land south and southeast of the city of Livermore, where almost all Livermore Valley vineyards are located. The South Livermore Valley is about 8 miles wide (west to east) from Ruby Hill in Pleasanton on the west to just past Greenville Road to the east, and about 2 miles long (north to south) from the City of Livermore's southerly boundary in the north to the southern foothills of the Diablo Range to the south. The South Livermore Valley generally corresponds to the boundaries of the Alameda County South Livermore Valley Area Plan.

The South Livermore Valley is subject to several overlapping land use plans of Alameda County, the City of Livermore and the City of Pleasanton. The applicable land use plans are briefly summarized below.

### 2.1 – Alameda County's 1993 South Livermore Valley Area Plan

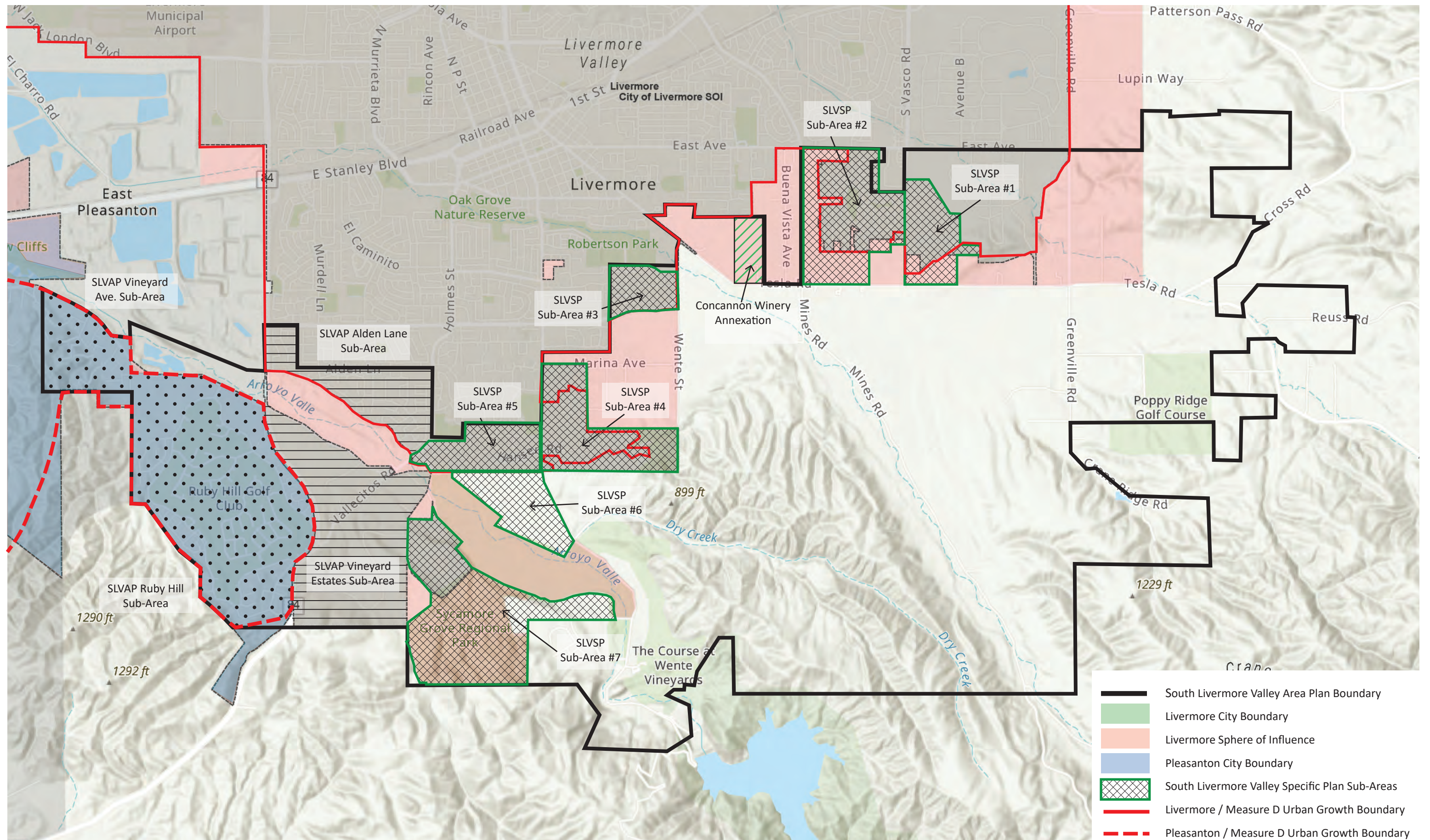
In an early effort to halt the urbanization of vineyards that was taking place in South Livermore, the County of Alameda and the cities of Livermore and Pleasanton initiated a multi-year planning process in the late 1980s aimed at protecting and rejuvenating the South Livermore Valley as a premium wine-producing region. Working with a wide range of interest groups and citizens, the County and the cities of Pleasanton and Livermore reached a consensus on a set of goals and objectives to guide future land use in the South Livermore Valley. This process resulted in the *South Livermore Valley Area Plan*, which was approved by the County Board of Supervisors in 1993.<sup>1</sup> The planning area for the South Livermore Valley Area Plan (SLVAP) includes approximately 14,000 acres of unincorporated land that extends in a broad crescent around the southern edge of the cities of Livermore and Pleasanton, and encompasses the majority of the South Livermore Valley's most suitable agricultural and viticulture land between Livermore's city limits and the ridge lands to the south, east and west (see **Figure 1**).

The SLVAP created no new entitlement for urban or other development, but rather creates a framework for the consideration of future development based on whether such development would further the agricultural preservation strategies of the SLVAP. The SLVAP recognizes that agriculture cannot compete on an economic basis with urban development, and so policies and implementation programs of the SLVAP direct new residential development to appropriate locations adjacent to cities and requires that new urbanization provide additional economic resources necessary to preserve and expand viticulture and other cultivated agriculture on the most important agricultural lands in the area. Among its goals, the SLVAP specifically calls for the expansion of cultivated agricultural acreage from approximately 2,100 acres in 1993, to a minimum of 5,000 acres.

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<sup>1</sup> Alameda County, South Livermore Valley Area Plan, 1993





**Figure 1**  
**South Livermore Planning Areas and Boundaries**



To achieve these goals, the SLVAP includes the following land use strategies:

- Creation of a density bonus system that provides an economic incentive to encourage landowners to expand viticulture acreage by permitting a reduction in the minimum parcel size, provided the landowner planted wine grapes and placed the land under a permanent agricultural easement;
- Establishment of an agricultural land trust (now the Tri Valley Conservancy) capable of accepting donations or purchasing conservation easements to protect productive agricultural lands in perpetuity; and
- Requiring all new urban development in the surrounding area of Livermore to contribute to preservation, promotion and expansion of viticulture in the Valley, which could include development of new vineyards, dedication of agricultural easements, financial contributions to the land trust, refurbishment of existing wineries, or the inclusion of wine country amenities such as golf courses, conference centers, and a wine museum.

The SLVAP encourages development of new wineries and other tourist-related projects that attract tourists and that increases recognition of the South Livermore Valley as a premium wine-producing region. The SLVAP suggests that such uses could include a wine museum, a culinary institute, conference center, or a resort hotel. These destination-type uses would be complemented by tourist-serving retail uses such as restaurants, bicycle rentals, art galleries or other small-scale uses that would contribute to the creation of an attractive, full-service destination for visitors to the wine country. Retail use and other major attractions are subject to an agricultural mitigation fee, rather than the acre-for-acre mitigation required of residential development. The SLVAP also recognizes that the City of Livermore has primary responsibility for overseeing and implementing an accompanying urban component of the SLVAP, since the majority of the SLVAP's anticipated urban development would need to be annexed into and served by the City of Livermore.

## 2.2 – City of Livermore' 1993 General Plan Amendment

Following the County's adoption of the SLVAP, the City of Livermore amended its General Plan in 1993 to incorporate compatible policies of the County's SLVAP. Livermore's amended General Plan provided a policy framework for the South Livermore Valley consistent with the County's SLVAP and established a City Urban Growth Boundary (see also **Figure 1**).<sup>2</sup> The policy direction of the General Plan amendment was intended to result in development of new residential units within the new South Livermore Urban Growth Boundary as a means of achieving expanded viticulture acreage via implementation of an agricultural mitigation program. That program was intended to require new urban development to plant one acre of new vineyard or other cultivated agriculture for every acre of urbanized land, and to plant one acre of new vineyard or other appropriate crop for every new home constructed. All new agricultural acreage planted under this mitigation program was to be located within the County's SLVAP planning area and placed under a permanent agricultural easement. Developers were also required to provide evidence of a long-term (8 years or more) maintenance contract for the care of the vineyards. Thus, the mitigation program was intended to use the increased economic value associated with new residential development to contribute to the expansion of viticulture in the South Livermore Valley. The City's 1993 amended General Plan also indicated Livermore's intention to establish a more detailed Specific Plan to establish the exact location of new urban development in the South Livermore Valley.

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<sup>2</sup> Livermore, *City of Livermore General Plan*, 1993

## 2.3 – Alameda County’s 1994 East County Area Plan

The Alameda County East County Area Plan (or ECAP) was originally approved by the County Board of Supervisors in 1994.<sup>3</sup> The East County planning area encompasses 418 square miles of eastern Alameda County and includes the cities of Dublin, Livermore, Pleasanton and a portion of Hayward, as well as surrounding unincorporated areas. The planning area extends from the Pleasanton/Dublin ridgeline on the west to the San Joaquin County line on the east, and from the Contra Costa County line on the north to the Santa Clara County line on the south. The ECAP is the County’s General Plan for all of East County, including the South Livermore Valley. At the time of preparation of the 1994 ECAP, the East County was experiencing significant growth pressure. With a population of approximately 133,000 in 1990, and projected to exceed 250,000 by the year 2010, growth and its effect on quality-of-life were the central issues in East County. Accordingly, the first, primary goal of the 1994 ECAP was to delineate areas suitable for urban development from other open space areas suitable for long-term protection of natural resources, agriculture and public safety, relying on an Urban Growth Boundary, or UGB.

The 1994 ECAP incorporated the SLVAP in its entirety (with minor reorganization and editorial changes to format). Relative to the South Livermore Valley, the 1994 ECAP recognized four separate subareas of the SLVAP, including the Vineyard Avenue, Alden Lane, Ruby Hill and the Vineyard areas (see also **Figure 1**).

- ECAP policy recognized the Vineyard Avenue and Alden Lane subareas as "Transitional Areas," due to their physical or visual isolation from the main part of the South Livermore Valley, adjacency and relationship to existing urbanized areas, and their location within the boundaries of Pleasanton and Livermore, respectively. The 1994 ECAP policy called for working with the cities of Pleasanton and Livermore to encourage urban development to provide a graceful transition between existing urban areas and the Vineyard area, and to promote recognition of the surrounding area as a premium wine-producing region through structural design, appropriate landscaping and open space, and signage. 1994 ECAP policies also called for working with the cities of Pleasanton and Livermore to ensure that new urban development within these Transitional Areas compensate for loss of cultivable or potentially cultivable soils through use of agricultural mitigation fees to fund the South Livermore Agricultural Land Trust.
- For the Ruby Hill area, 1994 ECAP policies called for establishment of development agreements, pre-annexation agreements or other means, such that the Ruby Hill area in Pleasanton would be developed to include up to 850 homes and a golf course, and required 467 acres of vineyards to be planted, two wineries to be restored, and the payment of a minimum of \$8.5 million in agricultural mitigation fees to be used to fund the South Livermore Agricultural Land Trust.
- Within the Vineyard Area, 1994 ECAP policies retained parcel size regulations at a 100-acre minimum per residence, and permitted agricultural uses that are compatible with the promotion of the area as a wine region. The 1994 ECAP formalized the SLVAP’s "Cultivated Agriculture Overlay District" for the remaining Vineyard Area. This Overlay District allows for a density bonus of up to four additional home sites per 100 acres if, and only if the applicant can demonstrate that the density bonus would contribute substantially to the goal of promoting viticulture or other cultivated agriculture, and if the land meets certain site criteria.

The 1994 ECAP also encouraged Livermore and Pleasanton to adopt policies and programs establishing other sources of funds for the Agricultural Land Trust, such as fees on appropriate development outside of the South Livermore Valley.

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<sup>3</sup> Alameda County, *Alameda County East County Area Plan (ECAP)*, 1994

## 2.4 - Livermore's 1997 South Livermore Valley Specific Plan

In 1997, the City of Livermore adopted the South Livermore Valley Specific Plan (SLVSP). <sup>4</sup>The land use concept for the SLVSP was intended to protect and enhance open space and agricultural uses, as well as to create a logical and coherent pattern of new urban uses. Accordingly, lands that are critical to the Valley's future as a major wine-producing region are to be placed under permanent agricultural easements and planted with vineyards or other intensive agricultural crops. The easement-protected lands establish a permanent boundary to prevent future urban expansion, and an agricultural mitigation program secured under permanent agricultural easements, the newly planted vineyards and other intensive agriculture.

New development within the SLVSP is intended to establish a permanent edge to the urban area, providing a gradual transition from urban to rural that allows agriculture to blend with developed areas, and integrates new development within an agricultural setting. The SLVSP focuses seven distinct Sub-Areas (see also **Figure 1**) that have relatively compact development patterns that allow for creation of residential neighborhoods that have a rural character, consistent with the area's scenic natural setting and the Valley's historic wine country character. Within these seven Sub-Areas, the SLVSP provides for the potential development of 487 acres (or 26% of the total 1,891-acre SLVSP planning area), accommodating up to 1,221 dwelling units. All the units are to be single-family detached residences. The SLVSP also designates 16 sites (nearly 60 acres) for possible commercial development that is intended to provide amenities that enhance the experience of visitors to the South Livermore Valley wine country, and only those commercial uses that support wine-related tourism are permitted.

In order to offset the impacts of this development, land that is critical to the Valley's future as a major wine producing region is to be placed under permanent agricultural easements and planted with vineyards or other intensive agricultural crops. In total, the agricultural mitigation program set forth in the SLVSP is intended to secure, under permanent agricultural easement, approximately 1,920 acres of newly planted vineyards and other intensive agricultural lands.

By siting new development and directing the location of agricultural easements, the SLVSP establishes a permanent boundary that prevents future urban expansion from threatening the viability of the South Livermore Valley wine region.

## 2.5 - Alameda County's 2000 Measure D Initiative and ECAP Amendments

In November of 2000, a ballot measure known as Measure D (or the Save Agriculture and Open Space Lands Initiative) passed by a majority of Alameda County voters and became effective as of December 22, 2000. The 2000 Measure D was an ordinance that amended the 1994 ECAP to revise the East County UGB to reserve less land for urban growth and more land for agriculture and open space, applied similar policies to rural Castro Valley, required new housing to be located primarily within existing cities, modified land use restrictions applicable to rural areas, and required a County-wide vote prior to any changes to these policies.<sup>5</sup> The ordinance was specifically designed to remove the County government from urban development outside the new UGB.

By May of 2002, Alameda County completed and adopted corresponding amendments to ECAP.<sup>6</sup> The Initiative resulted in the addition, deletion and revision of more than 60 policies and programs of the previously applicable 1994 ECAP, as well as establishment of and changes to the UGB and the ECAP Land Use Diagram. Two major changes were made in the 2002 ECAP in response to Measure D that are particularly

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<sup>4</sup> Livermore, South Livermore Valley Specific Plan,

<sup>5</sup> League of Women Voters, accessed at: <http://www.smartvoter.org/2000/11/07/ca/alm/meas/D/>

<sup>6</sup> Alameda County, *East County Area Plan*, as adopted by the Board May 2002

relevant to South Livermore. First, Measure D resulted in amending the South Livermore Valley Area Plan to place absolute limits on the density and geographic extent of this Area Plan. Second, ECAP land use policies for Large Parcel Agriculture, Resource Management and Rural Residential land use designations were amended to be more restrictive, including changes related to development standards for subdivisions and requiring Site Development Review for agricultural parcels. To maximize the long-term productivity of East County's agricultural resources (most of which are found in the South Livermore Valley), the 2002 ECAP calls for the conservation of Prime Agricultural Soils, Farmlands of Statewide Importance and Unique Farmlands that are located outside the UGB.

Except for specifically identified Parklands (Sycamore Grove Park, the Del Valle Regional Park and the Ohlone Regional Wilderness), the remainder of the South Livermore Valley has a land use designation under the 2002 ECAP of Large Parcel Agriculture (LPA). The LPA designation is primarily intended to provide for low-intensity agricultural and grazing uses, and also permits agricultural processing facilities (e.g., wineries and olive presses), limited agricultural support service uses (e.g., animal feed facilities, silos, stables and feed stores), secondary residential units, visitor-serving commercial facilities (e.g., tasting rooms, fruit stands, bed and breakfast inns), recreational uses, public and quasi-public uses, solid waste landfills and related waste management facilities, quarries, windfarms, utility corridors, and similar uses compatible with agriculture.

Specific policy limitations of ECAP as modified by the 2000 Measure D Initiative and that apply to the Large Parcel Agriculture land use designation included:

- A minimum parcel size of 100 acres (with exceptions for smaller existing parcels)
- A maximum building intensity for non-residential buildings of a .01 FAR (floor area ratio), but not less than 20,000 square feet, and where permitted, greenhouses shall have a maximum intensity of .025
- One single-family home per parcel, provided that all other County standards are met for adequate road access, sewer and water facilities, building envelope location, visual protection and public services
- Residential and residential accessory buildings shall have a maximum floor space of 12,000 square feet. Additional residential units may be allowed if they are occupied by farm employees required to reside on-site
- Apart from infrastructure, all buildings shall be located on a contiguous development envelope not to exceed 2 acres, except they may be located outside the envelope if necessary for security reasons or, for agricultural structures necessary for agricultural uses

The year 2000 Measure D Initiative did not supersede or change any of the provisions of the SLVAP and did not address the City of Livermore's SLVSP. The 2000 Measure D only applies to lands within unincorporated East Alameda County.

## **2.6 - Alameda County's 2022 Measure D Initiative**

In November of 2022, another ballot measure also known as Measure D was placed on the ballot by the County Board of Supervisors and was passed by a majority of Alameda County voters. This 2022 ballot measure amended certain policies and standards of the 2000 Measure D, providing for an increased development potential for agricultural buildings and covered equestrian riding arenas. Specifically, the 2022 Measure D allows for:



- A maximum floor area ratio of 0.025 (or 2.5% FAR) for “agricultural buildings”<sup>7</sup> in areas designated under the General Plan as Large Parcel Agriculture (LPA), which includes much of the unincorporated South Livermore Valley; and
- A maximum FAR of 0.025, with at least 20,000 square feet allowed on smaller parcels, up to a maximum of 60,000 square feet on larger parcels, for covered equestrian riding arenas in areas designated under the General Plan as Large Parcel Agriculture (LA) and Resource Management (RM).

The 2022 Measure D did not change the regulations pertaining to building space relative to residential and residential accessory buildings, did not change the FAR allowed for non-residential buildings, and did not change the requirements for a 2-acre contiguous development envelope. The permissible FAR for Agricultural Buildings and for Non-Residential Buildings are therefore additive, in that the total permitted FAR for combined agricultural buildings and non-residential buildings within the Large Parcel Agriculture land use designation is 0.035.

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<sup>7</sup> The following definition of agricultural building was approved by the County Board of Supervisors on April 13, 2023: *Agricultural, Building*: A structure designed and constructed or used to house farm implements or farm equipment; poultry, livestock, or similar farm or ranch animals; or hay, grain, olives, nuts, hops, wine, or other horticultural products in bins, tanks, barrels, case goods, or other storage vessels. This structure shall allow for the processing, treatment, packaging, and storage of agricultural and/or horticultural products. This structure shall not be a place of human habitation, nor shall it be a place used by the public or for social events.

## Chapter 3: Current Status within the South Livermore Valley

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The land use policy framework as described in Chapter 2 has presided over a relatively complex and often controversial land use and development pattern throughout the Livermore Valley over the past 30 years. Over this time-period, the broader issue of halting expanding urbanization of the Valley and preserving vineyards and other agricultural and open space lands has generally been resolved with establishment of the Measure D and corresponding Livermore and Pleasanton Urban Growth Boundaries. However, efforts to achieve the ECAP/SLVAP goals for rejuvenating the South Livermore Valley as a premium wine-producing region and achieving as much as 5,000 acres of planted vineyards remain ongoing.

The following provides a brief summary of the 20-year history and current land use status within the South Livermore Valley.

### 3.1 - Annexations and Development of SLVAP Transition Areas

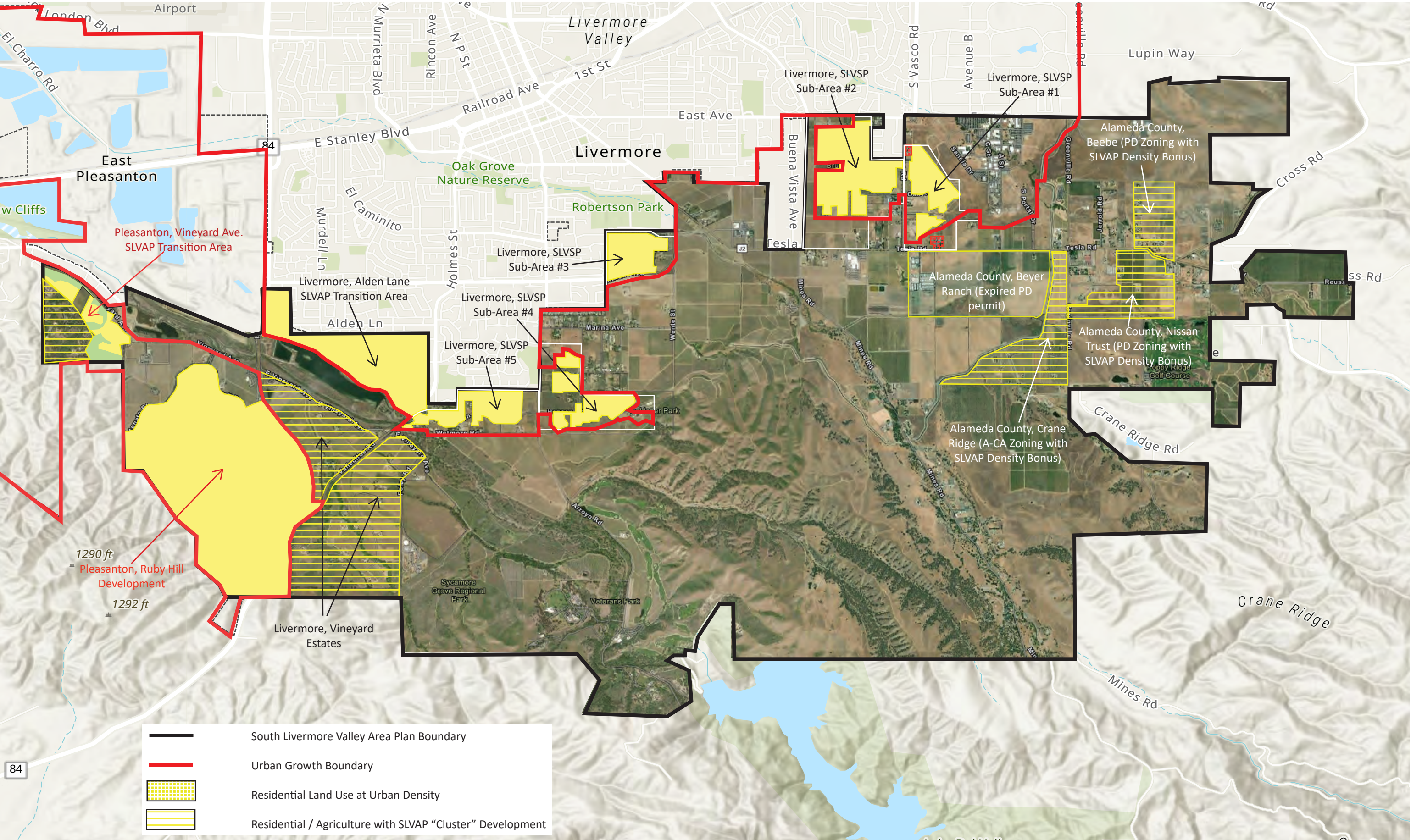
When the original SLVAP was being prepared, and just prior to approval of the original 1994 ECAP, the South Livermore Valley included several transitional areas at the urban/agricultural edge. These areas included Ruby Hill Area, the Ruby Hill Vineyard Estates, the Vineyard Avenue Corridor Area, and the Alden Lane Area. The 1993 and subsequent 2002 ECAP amendments incorporated development plans for these transitional areas that have now been implemented and are substantially complete, as described below and as shown in **Figure 2**.

#### Ruby Hill

In 1991, Alameda County approved development of the approximately 96-acre Ruby Hill master-planned community, which was expected to include 850 homes, a golf course, a retail site and other improvements on an approximately 1,600-acre site. Following this initial County approval, the City of Livermore enjoined Alameda County and the Ruby Hill developers in a legal challenge to this approval. The legal challenge was resolved via a four-way development agreement between Pleasanton, Livermore, Alameda County and the Ruby Hill developers, and included several pre-annexation agreements and other conditions of approval for the Ruby Hill project. These agreements and conditions provided for the annexation of Ruby Hill to the City of Pleasanton, permitting up to 850 homes and a golf course, and requiring 467 acres of vineyards to be planted within and adjacent to the development and permanently protected from further development by agricultural easements. Additionally, two historic wineries present on the site were required to be renovated and refurbished, and the project was conditioned on payment of agricultural mitigation fees to be used to fund the South Livermore Agricultural Land Trust (now Tri Valley Conservancy). The settlement agreement over Ruby Hill was also the stimulus for preparation of the County's SLVAP, adopted by Alameda County in 1993.

The Ruby Hill development began construction in 1993 and is now essentially complete, with 850 homes, an 18-hole golf course, approximately 280 acres of vineyard and vineyard-related area within the boundaries of Ruby Hill and additional adjacent vineyard area, and 91 acres of open space.





**Figure 2**  
Residential Developent within South Livermore Valley (urban and agricultural)

Source: Alameda LAFCO Base Map with 2023 Google Earth aerial photography; Livermore SLVSP, 1997; Alameda County SLVAP, 1994; Alameda County permit activity through 2023



## Vineyard Estates / Alden Lane

The Ruby Hill development proposal also included a separate component known as the Vineyard Estates area, located on 694 acres immediately east of Ruby Hill. As an additional element of the Ruby Hill settlement agreement, the City of Livermore agreed to annex the Vineyard Estates area. Livermore's annexation of the Vineyard Estates lands adjacent to Ruby Hill was intended to establish an urban limit that would prevent further eastward expansion of Pleasanton's urban lands. In 1992, the City of Livermore issued a CEQA Negative Declaration, and approved the Alden Lane/South Vineyard Avenue Area (Vineyard Estates) project.

The Vineyard Estates was then subdivided into thirty-two 20-acre parcels, each of which has been planted with vineyards and developed with an estate home on each parcel.

The companion Alden Lane Transitional Area in Livermore is just south of Alden Lane and north of Lake A, one of the first lakes in the 'Chain of Lakes' pursuant to the Alameda County Specific Plan for Livermore-Amador Valley Quarry Area Reclamation. The intent of annexing the Alden Lane Transitional Area was to encourage new urban development that provides a transition between existing urban areas and the adjacent vineyard area and establishing a permanent urban/agriculture edge. Construction of the South Alden Lane area (now known as the Oaks neighborhood) was completed in 2002, with approximately 280 single-family homes on lot sizes of generally 10,000 to 15,000 square feet in size. The Chain of Lakes located just south of the Alden Area Transition Area provides a buffer between this urban neighborhood and the predominantly agricultural land uses south of Vineyard Avenue.

## Vineyard Avenue Corridor

The SLVAP established a Vineyard Avenue Transitional Area in Pleasanton, and policies for the Vineyard Avenue Area encouraged new urban development in this area to, "provide a graceful transition between existing urban areas and the adjacent vineyards area, and to promote recognition of the area as a premium wine-producing region through structural design, appropriate landscaping and open space, and signage." In 1999, the City of Pleasanton annexed the Vineyard Avenue Area and adopted the Vineyard Avenue Specific Plan, governing development of the 384-acre area located on both sides of old Vineyard Avenue in the southeastern portion of Pleasanton, south of the Arroyo Del Valle and west of Ruby Hill.<sup>8</sup>

Pleasanton's Vineyard Avenue Specific Plan provides for the development of 189 new housing units in addition to 18 then-existing homes, which were planned to be retained or relocated on-site. The Specific Plan accommodates a range of housing types and densities that respond to the site's terrain and community needs, including four different residential designations. The Semi-Rural Residential designation permits custom homes on five-acre minimum-sized lots, intended to provide a transitional buffer between residential uses to the north and agricultural land to the south. The Hillside Residential district provided for 19 new homes on 40,000-square foot minimum-sized lots, allowing for a clustering of homes in well-defined areas of the hills, and permanent preservation of surrounding open space land. The Low-Density Residential district permits 79 new homes with a 20,000-square foot minimum lot size and is generally located in the rolling hills south of Vineyard Avenue. The Medium Density Residential district provides for up to 85 new single-family homes on 10,000-square foot minimum-sized lots and is concentrated in the more accessible and flatter portions of the planning area north of the prior alignment of Vineyard Avenue, to be developed as individual neighborhoods with a design character compatible with a "vineyard village" concept. An additional land use component of the Vineyard Avenue Specific Plan is the Vineyard district, which provides for a total of 66 acres of planted vineyards on five separate lots, with an estate home and support facilities permitted on each. The Specific Plan also anticipated development of a community park and an elementary school.

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<sup>8</sup> Pleasanton, *Vineyard Avenue Specific Plan*, June 1999



As of 2006, most of the single-family homes had been built or had planning approvals and Vineyard Avenue had been realigned. Today, the Vineyard Avenue Specific Plan includes approximately 168 residential homes, approximately 30 acres of vineyard or other agricultural crops, and surrounding open space. Neither the community park nor the elementary school have been constructed.

### 3.2 - South Livermore Valley Specific Plan Annexations

The City of Livermore's 1997 SLVSP was developed with the intention of creating a logical and coherent pattern of new urban uses, with corresponding permanent protection through conservation easements of agricultural lands that are critical to the Valley's future as a major wine-producing region. The new development permitted pursuant to the SLVSP is not intended to be an extension of the City's urban pattern, but rather a new and permanent edge to the urban area. As such, the SLVSP establishes development patterns that provide a more gradual and graceful transition from urban to rural. The protected agricultural lands and the City's Urban Growth Boundary establish a permanent boundary to prevent future urban expansion. The SLVSP includes seven distinct and non-contiguous sub-areas distributed along Livermore's southern boundary, within which 487 acres are designated for the development of up to 1,221 single-family detached residences, as well as 16 sites for possible commercial development supportive of wine-related tourism.<sup>9</sup>

In order to ensure that new development will make a direct contribution to the expansion of viticulture in the South Livermore Valley, the SLVSP established an accompanying mitigation program that requires new urban development pursuant to the SLVSP to plant one acre of new vineyard (or other appropriate cultivated agriculture, such as orchards) for every acre urbanized, and to plant one acre of new vineyard (or other appropriate crop) for every new home constructed. All new agricultural acreage planted under this mitigation program must be located within the County's SLVAP boundaries (inclusive of the SLVSP Sub-Areas) and must be placed under permanent agricultural easement. In addition to the planting and dedicating of easements on the mitigation acreage, developers are also required to provide evidence of a long-term (8 years or more) maintenance contract for care of the vineyards. Thus, the mitigation program uses the increased economic value associated with new residential development to directly contribute to the expansion of viticulture in the South Valley. The agricultural mitigation program was intended to secure, under permanent agricultural easement, approximately 1,920 acres of newly planted vineyards and other intensive agricultural lands.

The SLVSP established the City of Livermore's primary responsibility for overseeing and implementing the urban component of this strategy, since most of the urban development was to be annexed into and served by the City. The Implementation Element of the SLVSP set forth a variety of implementing steps and regulatory procedures necessary to implement the SLVSP, including City-initiated pre-zoning and annexations, and adjustments to the City's Growth Management System. The Implementation Element also established the basic steps that developers needed to follow to obtain project approvals, including preparation of public improvement plans, financing plans and development agreements.

Development pursuant to the SLVSP has occurred primarily on five of the seven sub-areas of the SLVSP, throughout an approximate ten-year period from 2003 through 2013. In a presentation prepared by the Livermore Community Development Director in 2011, that presentation identified the following progress toward implementation of the SLVSP:<sup>10</sup>

- In 1993 there were 2,100 acres in planted vineyards. By 2010, with the combination of the County's Density Bonus Program and the Tri-Valley Conservancy land acquisitions, approximately 5,000 acres of land had been placed under permanent conservation easement. This included dedication of 371 acres to

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<sup>9</sup> Livermore, *SLVSP 1997*, page 3-1

<sup>10</sup> Livermore Community Development Director, *Managing the Agricultural/Urban Interface*, September 2011

the East Bay Regional Park District (EBRPD) as an addition to Sycamore Grove Park, and the dedication of 55 acres as regional open space.

- In 1993 there were only 11 wineries in the South Livermore Valley, and in 2010 that number had increased to 42 wineries.
- Between 1993 and 2010, 1,155 new homes were built in six new neighborhoods to create a new agriculture/urban interface.

Now in 2023, most of the SLVSP's expected annexations and new development have been completed. **Table 1** presents a summary of the SLVSP's expectations, as compared to today's (2023) current conditions.

As indicated in Table 1, virtually all the new residential developments contemplated under the SLVSP have been annexed to the City of Livermore, and construction of these new homes occurred between the years of 2003 and as recently as 2013. There is no new residential development associated with the SLVSP that has not already occurred, except for 12 units (6 one-acre parcels, and 6 20-acre parcels) within Sub-Area 7. Accordingly, the SLVSP's agricultural mitigation program has been almost completely implemented, and very little additional vineyard or orchard plantings can be expected pursuant to the mitigation program.

**Table 1: SLVSP Development Potential and Actual Development to Date**

	<u>SLVSP Development Potential <sup>1</sup></u>	<u>Actual Development (2023)</u>
<b>Sub-Area #1</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	133	133
New Commercial Development (sites)	0	0
Agricultural Land (acres)	94	73
<b>Sub-Area #2</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	574	530
New Commercial Development (sites)	2	0
Agricultural Land (acres)	177	219
<b>Sub-Area #3</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	195	244
Commercial Development (sites)	2	0
Agricultural Land (acres)	16	18
<b>Sub-Area #4</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	130	130
New Commercial Development (sites)	4	2
Agricultural Land (acres)	117	126
<b>Sub-Area #5</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	177	175
New Commercial Development (sites)	5	1
Agricultural Land (acres)	42	48
<b>Sub-Area #6</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	0	0
New Commercial Development (sites)	1	0
Agricultural Land (acres)	174	188
<b>Sub-Area #7</b> (east side of South Vasco Road between East Avenue and Tesla Road)		
Residential Development (lots)	12	0
New Commercial Development (sites)	1	0
Agricultural Land (acres)	188	76
<b>Total SLVSP</b>		
Residential Development (lots)	1,221	1,212
New Commercial Development (sites)	16	3
Agricultural Land (acres)	810	747

Source: City of Livermore, SLVSP, 1997 as amended 2004

Of the SLVSP's 16 commercial sites, only five of these sites have been developed with commercial uses (the Pruett Farms, Cuda Ridge, Dante Robere and Las Positas wineries, and the Caldeira Estates rental lodging accommodations), as shown in **Table 2** and as illustrated in **Figure 3**. In its Staff Report to the Livermore City Council in June of 2022, Livermore staff suggests, *"likely due to weaker market demand, land costs and financial risks, the extent of small-scale wine-country commercial uses (e.g., inns, bed and breakfasts, wineries, tasting rooms, restaurants, etc.) on the SLVSP's designated commercial sites has not been as strong as anticipated."*

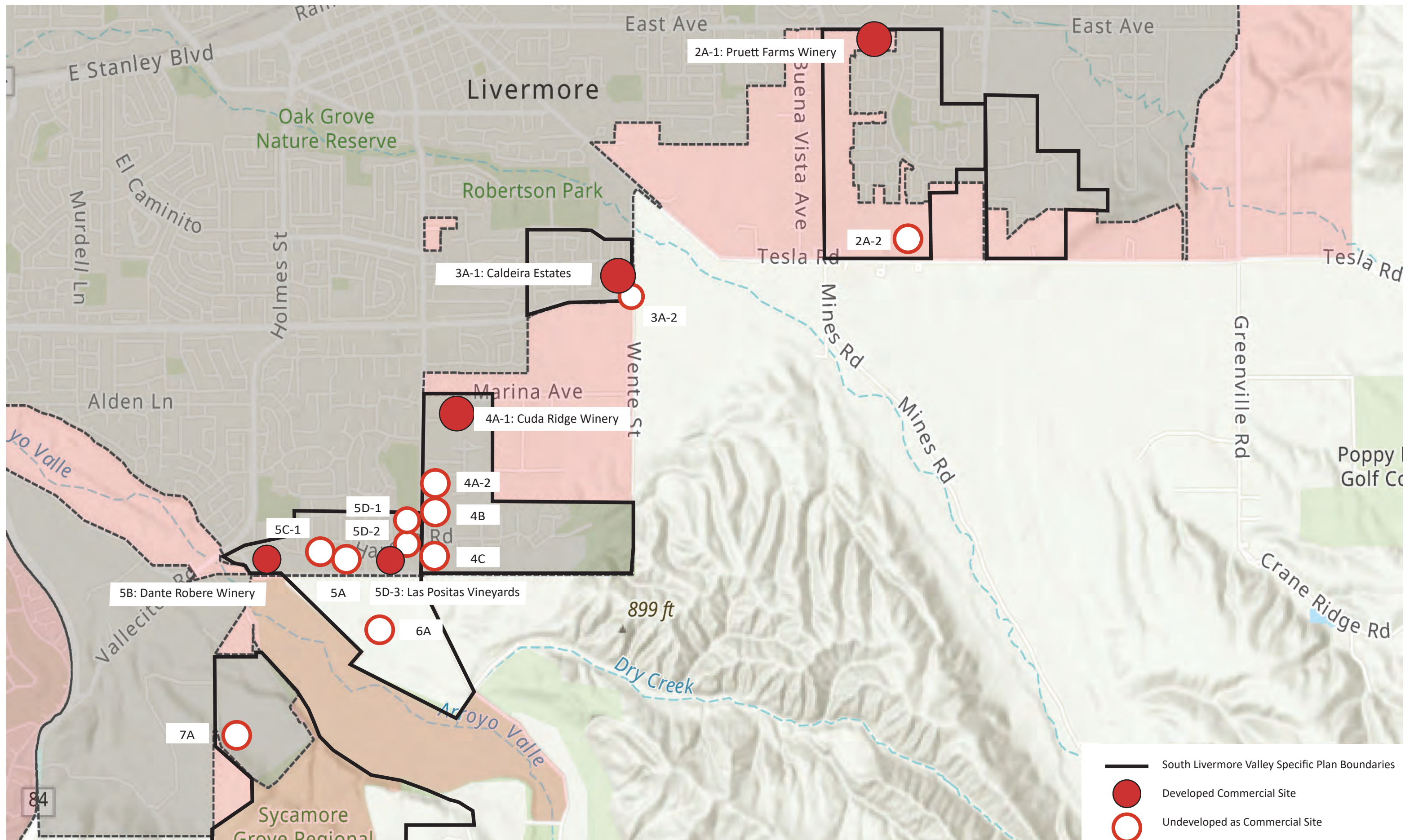
**Table 2: SLVSP Commercial Development to Date**

<u>Sub-Area</u>	<u>Site #</u>	<u>Permitted Uses</u>	<u>Existing Use</u>
2	A1	Small Winery or B&B; and Tasting Room or Small Restaurant	<b>Pruett Farms Winery</b>
2	A2	Medium Winery or B&B; and Tasting Room or Small Restaurant	private residence
3	A1	Small Winery or B&B	<b>Caldeira Estates accommodations</b>
3	A2	Small Tasting Room or Small Restaurant	undeveloped
4	A1	Small Olive Mill and Wine Tasting Room	<b>Cuda Ridge Winery</b>
4	A2	Small Winery	vineyard
4	B	Small Winery or Small Restaurant	vineyard
4	C	Small Winery	vineyard
5	C1	Small Winery	undeveloped
5	D1	Commercial Center	undeveloped
5	D2	Wine County Inn and Restaurant	undeveloped
5	D3	Small Winery	<b>Las Positas Vineyards Winery</b>
5	A	B&B	residences
5	B	Small Winery	<b>Dante Robere Winery</b>
6	A	Medium Winery	vineyards
7	A	Winery, Restaurant and Wine County Inn	undeveloped

Source: City of Livermore, *SLVSP* as amended 2004

As shown in Table 2, the SLVSP is very specific about what types of commercial uses will be permitted on each site. New commercial uses are permitted subject to conditional use permits or other project-specific review. All commercial development applications are also subject to a site plan approval and/or a Planned Unit Development permit. Additional accessory activities that support the permitted uses may be permitted with the approval of a conditional use permit. SLVSP policies provide that commercial uses must maintain a small, pedestrian scale, will not exceed an FAR of 0.25, building setbacks for commercial sites (with one exception) shall be 100 feet from road frontages, all setback areas shall be planted with vineyards or orchards, and the design of commercial facilities shall be consistent with the rural, wine country character. The SLVSP also includes detailed design standards and guidelines to guide the City's evaluation of applications for these commercial sites. The rigor and detail of these standards and guidelines may affect market demand for these sites.





**Figure 3**  
**South Livermore Valley Specific Plan, Commercial Sites**

- South Livermore Valley Specific Plan Boundaries
- Developed Commercial Site
- Undeveloped as Commercial Site

Source: City of Livermore, South Livermore Valley Specific Plan, as amended 2004



Other pre-existing commercial uses within the SLVSP Sub-Areas, including four equestrian facilities, two wineries (Rios-Lovell and Livermore Valley Cellars) and a tree farm, remain.<sup>11</sup>

The SLVSP's agricultural mitigation program did not intend to accommodate all the expected 1,920 acres of newly planted vineyards or orchards to occur only within the seven Sub-Areas of the SLVSP. As shown in Table 1, the SLVSP did anticipate the potential for as much as 810 acres of new agricultural lands within these Sub-Areas, and nearly 750 acres of vineyards and orchards have been established (nearly 100 acres of anticipated vineyards/orchards in Sub-Area 7 have yet to be established). The remaining agricultural mitigation acreage has occurred outside of the SLVSP's Sub-Areas. Agricultural mitigation fees from new development within the SLVSP area were used by the Tri Valley Conservancy to secure conservation easements elsewhere within the South Livermore Valley.

### 3.3 - Special Annexations and Island Annexations

#### Concannon Winery

In 2014, the Water Board adopted Waste Discharge Requirements for the Concannon Winery that allowed the winery to discharge treated wastewater to land and allowed the winery two years to complete a connection to a municipal sanitary sewer or to initiate alternative compliance actions.<sup>12</sup> The winery was not able to complete either of those actions, and the discharge of treated wastewater to land was terminated in 2016. The winery was required to haul sanitary wastewater and winery wastewater to the EBMUD wastewater treatment plant for disposal. To remedy this condition, Concannon Winery pursued additional measures to comply with the Water Board's waste discharge requirements. These measures included substantial improvements to its wastewater treatment system and seeking a connection to the City of Livermore sewer system.

Concannon Winery's 2017 Wastewater Management Plan (WMP) included substantial new wastewater treatment systems (including collection, conveyance, treatment, storage and discharge system designed to reduce biochemical oxygen demand, total suspended solids and total nitrogen in winery wastewater), the use of treated winery wastewater for irrigation of vineyards and cover crops, and the cessation of discharge of sanitary waste to land. The WMP also includes an anticipated connection to the City of Livermore's sewer system for discharge of all sanitary waste from the facility, and as a backup discharge location for treated winery wastewater. In 2017, the Water Board adopted a new Waste Discharge Requirement Order to reflect the improved conditions at the Concannon Winery, including the changes made to the wastewater treatment system, changes to the location and method of discharging treated wastewater, and adoption of a self-monitoring program.<sup>13</sup>

Concurrently, Concannon Winery pursued a connection to the City of Livermore sewer system by seeking to annex to the City of Livermore. In October of 2017, the City of Livermore agreed to a request by owners of the Concannon Winery to annex and pre-zone three parcels totaling 79.4 acres at Tesla Road to enable the property to connect to the City's sanitary sewer system. The City adopted a resolution certifying an environmental determination and authorizing submittal of an application to Alameda LAFCO to request initiation of proceedings for the proposed annexation of the Concannon Winery property and adopted a

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<sup>11</sup> Livermore, City Council Staff Report, Item #7-2, *Receive Alameda County Local Agency Formation Commission 20-Year Report on Measure D*, June 27, 2022

<sup>12</sup> SFRWQCB, *Order # R2-2014-0029, Waste Discharge Requirements for the Wine Group, LLC., Concannon Winery Wastewater Management Systems*, July 9, 2014

<sup>13</sup> SFRWQCB, *Order #R2-2017-0010, Waste Discharge Requirements for the Wine Group, LLC., Concannon Winery Wastewater Management Systems*, April 12, 2017

resolution authorizing execution of a transfer of property tax revenue agreement for the Concannon Winery property with Alameda County.

In September of 2018, Alameda LAFCO considered and approved the annexation proposal filed on behalf of the Concannon Winery landowners by the City of Livermore, annexing the Concannon Winery property into the City of Livermore for purposes of receiving public wastewater services. The annexation was found necessary for the discharge of industrial and domestic waste to alleviate environmental health concerns.<sup>14</sup>

### Other “Island” Annexations

Alameda LAFCO has worked with the cities of Livermore and Pleasanton to consider and approve several annexation applications for unincorporated “island” properties substantially surrounded by incorporated lands, has considered an out-of-area service agreement to extend sewer services to a proposed project in Livermore Valley known as Beyer Ranch (that project was approved by the County but its permit subsequently lapsed),<sup>15</sup> and to consider the appropriate Sphere for certain gravel quarry properties within the Chain of Lakes. None of these prior Alameda LAFCO actions or considerations for “island” properties have materially altered or affected municipal services or changes of organization within the South Livermore Valley.

### 3.4 - SLVAP “Cluster” Development

Within the unincorporated Vineyard Area of South Livermore Valley, the County’s SLVAP provides for a “Cultivated Agriculture Overlay District”. This district provides for certain exceptions or differences in land use policies that apply elsewhere in County-designated Agricultural and/or Resource Management areas. Specifically, the Overlay District provides for a base density of 100 acres per home site, but also allows a density bonus of up to 4 additional home sites per 100 acres or fraction thereof (i.e., up to 5 units per 100 acres). The density bonus must demonstrate that the development will contribute substantially to the goal of promoting viticulture or other cultivated agriculture. Accordingly, an applicant must guarantee that a minimum of 90% of the original parcel will be permanently set aside for viticulture or other cultivated agriculture, that the set-aside acreage will be planted in wine grapes or other cultivated agriculture, and that provisions (such as agricultural conservation easements) are in place to ensure its continued cultivated agricultural use. Building site envelopes for homes and ancillary uses shall be designated on the 10%-portion of the parcel, outside the required 90% set aside for agricultural areas, and no building site envelope may exceed a 25% slope. New commercial uses may also be proposed as part of a bonus density application and are similarly limited to the 10% maximum area of each parcel not dedicated to cultivated agriculture. Wineries and small bed-and-breakfast establishments are examples of appropriate commercial uses.<sup>16</sup>

Since the approval of the SLVAP and its “Cultivated Agriculture Overlay District”, Alameda County has only approved a few projects that have been developed relying on the density bonus provisions:<sup>17</sup>

- The Vineyard Estates development adjacent to Ruby Hill (described above), was one of the first projects in South Livermore Valley to take advantage of the clustering and density bonus provisions. Vineyard Estates is located on 694 acres immediately east of Ruby Hill. The Vineyard Estates property was

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<sup>14</sup> Alameda LAFCO Agenda Report, *Proposal for Annexation of 4592 Tesla Road et al to the City of Livermore*, for September 20, 2018, Item #10, and *Summary Action Minutes, Regular Meeting*, September 20, 2018

<sup>15</sup> Alameda County Community Development Agency, *Planning Department Staff Report to the Planning Commission, Beyer Ranch Winery Project*, February 5, 2018

<sup>16</sup> Alameda County, SLVAP, 1993, pages 14-17

<sup>17</sup> Alameda County Community Development Agency, personal communication, planning cases in the SVAP are for the past 20 years, 2023

subdivided into thirty-two 20-acre parcels. Each parcel is planted with vineyards and developed with one estate home on each parcel, resulting in 90% of the overall Vineyard Estates property being set aside for agricultural or open space use.

- The Crane Ridge development along the west side of Greenville Road and south of Tesla Road relied on the provisions of the Cultivated Agriculture Overlay District (A-CA district) to allow for the subdivision of approximately 200 acres into ten residential/winery sites (i.e., 10, approximately 20-acre parcels), with the majority of these parcels planted as wine grapes.
- The Beebe Family Trust project (Zoning Unit 2006) relied on the Planned Development District provisions of the SLVAP's Cultivated Overlay District to subdivide an 85-acre parcel along the north side of Tesla Road and east of Greenville Road into four lots (i.e., 4, 20-acre minimum parcel), with required planting of approximately 37 acres of new vineyards and retaining 11 acres of existing vineyards. A conservation easement protects 90% of the property for permanent agricultural use.
- The Nissan Family Trust project (Zoning Unit 2005) also relied on the Planned Development District provisions of the SLVAP's Cultivated Overlay District to subdivide an approximately 162-acre parcel along the south side of Tesla Road and east of Greenville Road into eight lots (i.e., 8, 20-acre minimum parcels), with associated vineyard planting and conservation easements.

One additional cluster development project (Beyer Ranch) was approved by the County, but its subdivision permit has expired, and the development project did not proceed. Beyer Ranch was a proposal to subdivide a roughly 244-acre site into 12 lots, with a minimum area of 20 acres each. Six lots on the north half of the site were intended for commercial winery facilities with a large winery hospitality/events center. The other six lots on the south half and east side of the site were intended to be developed with one single-family residence each, plus vineyards.<sup>18</sup>

### 3.5 - Agricultural Lands

#### Agricultural Land, per California Department of Conservation's Farmland Mapping

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides data pertaining to California's agricultural land resources. This data is an inventory of agricultural soil resources, generally updated every two years (however, the latest data available for Alameda County is for the year 2018). Agricultural lands within Alameda County that are tracked by the FMMP fall within the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland and Grazing Land. These land use categories are more specifically described below:<sup>19</sup>

- *Prime Farmland*: Farmland that is best suited for producing food, feed, forage, fiber and oilseed crops, with the best combination of physical and chemical features able to sustain long-term agricultural production, and available for these uses. This land has the soil quality, growing season and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date, to be considered "Prime".

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<sup>18</sup> Alameda County Community Development Agency, *Planning Department Staff Report to the Planning Commission, Beyer Ranch Winery Project*, February 5, 2018

<sup>19</sup> California Department of Conservation, Farmland Mapping and Monitoring Program (FMMP) accessed at: <https://maps.conservation.ca.gov/dlrp/ciftimeseries/> - per the FMMP website, "the 2020 data is under development and will be updated as areas are completed", but Alameda County data is not available as of the date of this Study



- *Farmland of Statewide Importance:* Farmland of Statewide Importance has a good combination of physical and chemical characteristics for producing food, feed, forage, and fiber and oilseed crops, and is available for these uses. Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date, to be considered of Statewide Importance.
- *Unique Farmland:* Unique Farmland is land other than Prime and Farmland of Statewide Importance that is currently used to produce specific high value food and fiber crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. These lands are currently producing crops of high economic importance to California (e.g., vineyards). They are usually irrigated but they may include non-irrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date, to qualify as being Unique Farmland.
- *Grazing Land:* Grazing Lands are those lands on which the existing vegetation is suited to the grazing of livestock. 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.

According to the FMMP's 2018 data, the South Livermore Valley contains 1,127 acres of Prime Farmland, 1,014 acres of Farmland of Statewide Importance and 1,680 acres of Unique Farmland – for a total of 3,822 acres of designated/identified agricultural land resources (see **Figure 4**).

Whereas these agricultural land resource designations are premised on soil quality, growing season and moisture, they also require the land to have been used for cultivated agricultural production at some time during the four years prior to the mapping date. Therefore, there is a strong correlation between FMMP data and mapped vineyards and orchards (see below).

Most of the remaining land within the South Livermore Valley is currently designated as Grazing Land. This designation does not suggest that the underlying soil types are not agriculturally productive, but only that they have not been actively used for agricultural production at some time during the past four years. Based on a review of historic FMMP data, many of the areas currently designated as important agricultural resources and that are now actively under agricultural production were, at some point, previously designated as Grazing Land. Also, the FMMP's designation of Farmland of Statewide Importance and Unique Farmland is not intended to indicate a soil category of lesser value than Prime. The FMMP's designation of Statewide Important or Unique Farmland simply recognizes vineyards as providing a sustained production of a specific high quality and high yield crop of economic importance to California.

### 3.6 - Vineyards and Orchards

#### Vineyard Acreage over Time

Wine grapes are the major agricultural crop in the Livermore Valley, comprising 90 percent of the Valley's irrigated agricultural acreage. Since the 1880s, the Livermore Valley has had a distinguished history as one of California's premium wine grape regions. However, according to information from *Realizing the Heritage* and from City of Livermore research, the extent of vineyard acreage in the Livermore Valley has varied substantially over time:<sup>20</sup>

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<sup>20</sup> Lapsley and Sumner, *Realizing the Heritage* 2022

- In 1891, the California Board of Viticultural Commissioners conducted an in-depth survey of grape growing and winemaking in each California County. According to this survey, Livermore had approximately 3,770 acres planted in vineyards.
- Wine production ebbed during the early 1900s due to the Depression, prohibition, and outbreak of phylloxera. By 1966, there were only about 1,690 acres of vineyard land remaining, partially due to the threat of encroaching urban development.
- By the early 1990s, the County's SLVAP EIR estimated that the South Livermore Valley vineyards had grown to contain perhaps 2,000 acres of vineyards and 100 acres of orchards.
- The 1990s were a boom period for California vineyards in general, with wine grape acreage doubling statewide in a single decade. In Livermore, approximately 1,900 acres of vineyards were planted or re-planted, most of which was a result of mitigation offsets for urban development.
- Most recently, *Realizing the Heritage* reports that as of September of 2020, there were just over 3,100 acres of orchards and vineyards in the South Livermore Valley, of which 2,824 acres were planted as vineyards (wine grapes) and 160 acres were planted to olives, and 135 acres planted to pistachios.<sup>21</sup>

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<sup>21</sup> Lapsley and Sumner, *Realizing the Heritage*, 2022, page 21



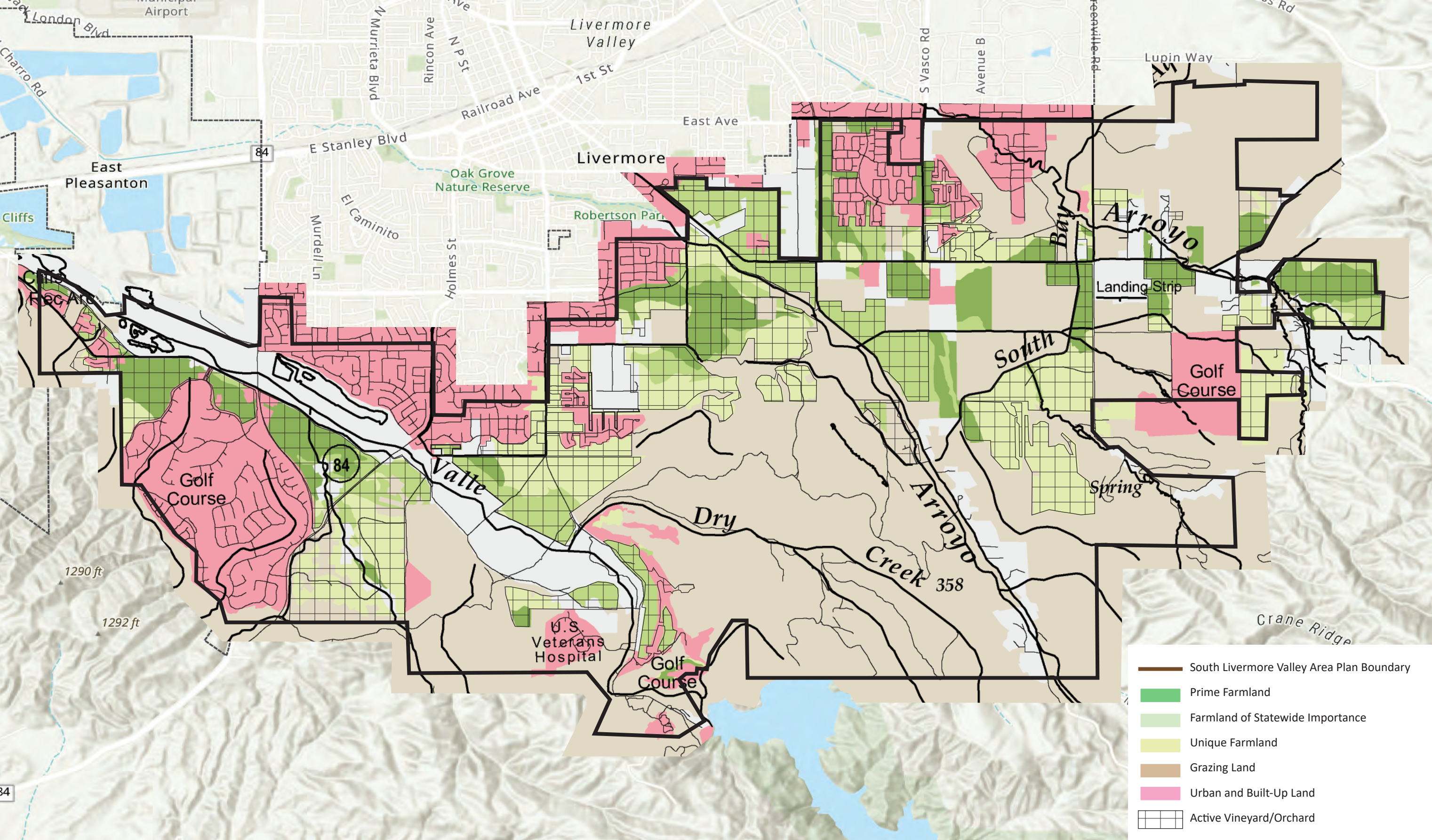


Figure 4  
Important Farmlands as defined by the California Department of Conservation

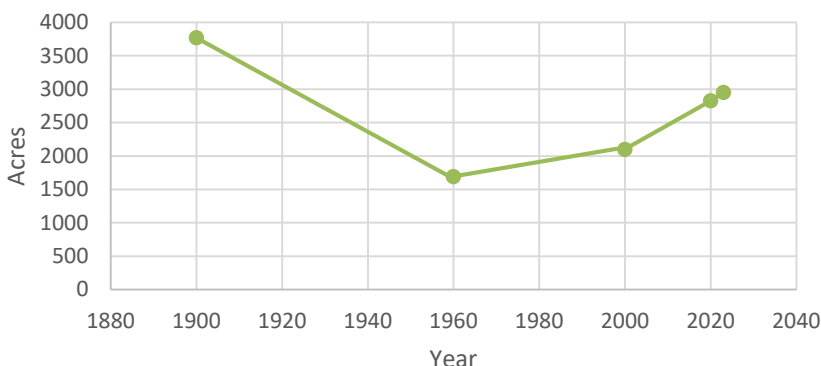
Source: California Department of Conservation  
Farmland Mapping & Monitoring Program, accessed at: <https://maps.conservation.ca.gov/DLRP/CIFF/>



Livermore Valley has seen a surge in vineyard acreage over the past 30 years, in strong response to Livermore and County plans that have established Urban Growth boundaries and required planting or re-planting of vineyards as mitigation offsets for urban development. Livermore Valley’s vineyard acreage has also benefitted from a projected profitability of wine grapes and relatively reliable water supply from Zone 7.<sup>22</sup>

**Chart 3** below demonstrates this substantial swing in cultivated acreage in Livermore Valley.

**Chart 3: Change in Vineyard Acreage over Time**



Source: Lapsley and Sumner, *Realizing the Heritage* 2022

### Characteristics of Livermore Valley’s Existing Vineyards

Livermore Valley’s vineyard acreage is divided among approximately 125 separate vineyards, most of which are small and independent.

- 68 vineyards are under 10 acres in size, and 36 vineyards are over 10 but less than 20 acres. Collectively these 104 vineyards account for about one-third of the Valley’s vineyard acreage
- 13 vineyards of between 20 acres and 100 acres account for just over one-third of Valley’s vineyard acreage
- 8 vineyards are larger than 100 acres in size, and account for nearly 1,000 acres, or just less than one-third of the Valley’s vineyard acreage

Two companies (Wente and Concanon) own approximately half of Livermore Valley’s wine grape acreage, including most of the larger and mid-sized vineyards. Most of the small vineyards are farmed by vineyard management companies rather than by the vineyard owner, and about 500 acres of vineyards are leased to third parties.<sup>23</sup>

### Vineyard Age

As much as 1,500 acres of Livermore’s vineyards were planted in the late 1990s and early 2000s, as mitigation for urban development. Other new vineyard plantings occurred during this time in response to projected winegrape profitability and improved water availability from Zone 7. *Realizing the Heritage* estimates that between 1,900 and 2,100 acres of vineyards were established in the Livermore Valley in the late 1990s and early 2000s.<sup>24</sup> Most California coastal vineyards have an economic life of about 30 years. Vineyards older than 30 years of age can certainly continue to produce grapes, but the yield per acre

<sup>22</sup> Lapsley and Sumner, *Realizing the Heritage* 2022

<sup>23</sup> Lapsley and Sumner, *Realizing the Heritage*, 2022, starting at page 25

<sup>24</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 75

declines, making them less economical to farm. These 1,900 to 2,100 acres of 1990's-era vineyards, which represent approximately 65 percent of Livermore's current vineyard acreage, will be due to be replaced in the coming decade.<sup>25</sup>

## Economic Outlook for Livermore Valley Vineyards

### Existing Vineyards

*Realizing the Heritage* suggests that one of the most important findings of their study is that, "many of Livermore's independent vineyards have not been profitable. While revenue may be sufficient to cover annual operating expenses, in many cases the amount of annual revenue above annual operating expenses is not sufficient to cover the amortized expenses of establishing a vineyard or to generate a return on the investment in vineyard."<sup>26</sup>

Most independent Livermore vineyards are small. These smaller vineyards tend to have higher operating costs per acre than larger vineyards, and lower market prices than those vineyards with on-going contracts with wineries. Many of these smaller vineyards are also relatively old. Almost 2,000 of Livermore's 2,900 acres of vineyards were planted between 1995 and 2003 and are now in or entering their third decade of production. Since California vineyards generally have an economic lifespan of about 30 years before declining productivity, the owners of these older Livermore vineyards will soon face a decision about replanting. Anecdotal reports indicate that some Livermore Valley vineyards have not been profitable for decades, which is consistent with lack of new vineyard plantings in the Valley since the early 2000's. Given the decades-long experience of low returns on investment in vineyards, and especially the difficulty in finding a profitable market for grapes, it is likely that many vineyard owners will not invest in re-planting, unless they have a winery contract for their production.<sup>27</sup>

The findings from *Realizing the Heritage* are supported by data presented in Alameda County's annual Crop Reports.<sup>28</sup> The charts presented below compare annual production of wine grapes (almost exclusively from the Livermore Valley) to total sales (as adjusted for an annual average inflation rate of 2.44%). As **Chart 4** demonstrates, the annual production of wine grapes has generally been on an increasing trajectory since 2000 (although there was a major dip in 2019-2020), representing an average annual increase of nearly 9% in total grape production. **Chart 5** presents the value of wine grapes sold during that same period. Whereas the annual value of wine grapes sales has also generally been on an increasing trajectory since 2000, the average annual increase in sales is just over 5%, indicating that the relative value of grapes has not kept pace with production (i.e., lower returns per ton of grapes).

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<sup>25</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 102

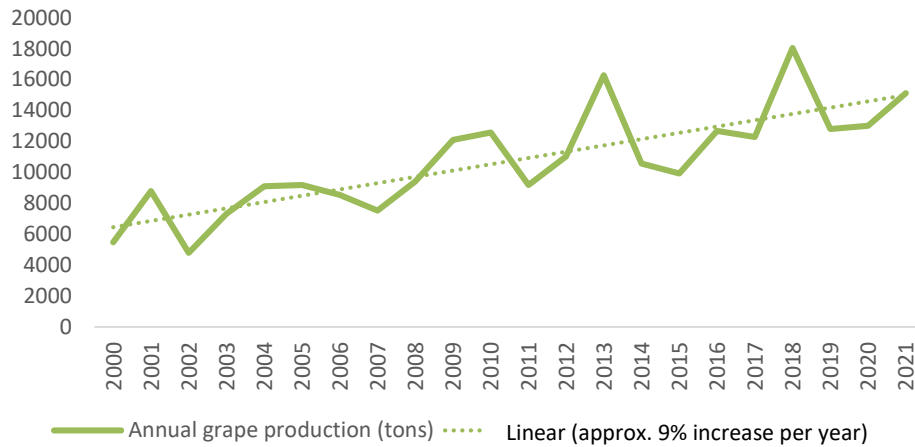
<sup>26</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 110

<sup>27</sup> *Realizing the Heritage*, 2022 pages 110-111

<sup>28</sup> Alameda County Community Development Agency, *Agriculture/Weights & Measures, Crop Reports*, years 2000 to 2021



**Chart 4: Alameda County Annual Wine Grape Production (tons), 2000 to 2021**



Source: Alameda County Community Development Agency, Agriculture/Weights & Measures, *Crop Reports, years 2000 to 2021*

**Chart 5: Alameda County Value of Wine Grapes Sold, 2000 to 2021**



Source: Alameda County Community Development Agency, Agriculture/Weights & Measures, *Crop Reports, years 2000 to 2021*

### New Vineyards

*Realizing the Heritage* makes the clear statement that, “new vineyards are expensive, thirty-year capital investments”, and cites two recent U.C. studies that estimate the cost of establishing and operating a new vineyard in the Livermore Valley. These studies estimate that:

- vineyard-suitable land in the Livermore Valley may cost as much as \$25,000 per acre
- it costs another approximately \$30,000 per acre to establish new vineyard planting, and
- cash costs for farming an acre of grapes were reported as being between \$4,000 and \$5,000 per acre

The Cost and Return studies cited in *Realizing the Heritage* conclude that, “a well-managed vineyard, with better than average yields and expected prices at or just above those prevailing for high quality Livermore

Valley grapes, could expect an annual return of about \$2,800 per acre after covering the interest costs on the land and vineyard establishment. Under these conditions, new vineyards would be profitable.”<sup>29</sup>

However, *Realizing the Heritage* also finds that, “attempting to encourage more Livermore grape supply without stimulating additional demand for those grapes is unlikely to be successful. Insufficient grower returns are not a recipe to stimulate investment. We have found that there can be profitable vineyard and winery investment at suitable market prices, but any increase in acreage must be supported by increased demand for Livermore grapes and wine.”<sup>30</sup>

*Realizing the Heritage* also cautions that many of the conditions that will affect future grape prices will be regional in nature not Livermore-specific. Regional and statewide supply and demand for California coastal grapes and wine over the next three decades is difficult to predict, and these changes will affect the prices for Livermore grapes and the profitability of Livermore vineyards. Thus, as with other farm investments, planting a Livermore vineyard remains a risky undertaking.<sup>31</sup>

## Orchards

Livermore Valley has also found a niche in the production of olives and pistachios. There are three commercial-scale olive orchards in the Livermore Valley, totaling approximately 160 acres. These olive orchards are distributed across the Livermore Valley. Although additional olives are grown as boundaries or around wineries, these limited plantings are not included in the total of olive orchards.

Livermore Valley also has five different pistachio orchards, totaling 135 acres. These pistachio orchards are all located in the Arroyo Mocho area. Pistachios seem particularly suitable for property adjacent to housing because they do not require as many agricultural operations each year as do wine grapes.<sup>32</sup>

## Currently Estimated Vineyard and Orchard Acreage

Using the numbers from *Realizing the Heritage* and maps prepared by the Tri Valley Conservancy as a starting point,<sup>33</sup> and relying upon aerial photographs as of 2023 (Google Earth), this Study estimates that the current acreage of vineyards in the South Livermore Valley is approximately 2,950 acres, and the current acreage of orchards (primarily pistachio and olive) is approximately 350 acres, for a total cultivated acreage of approximately 3,300 acres, as indicated in **Table 2** and shown on **Figure 5**.

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<sup>29</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 14

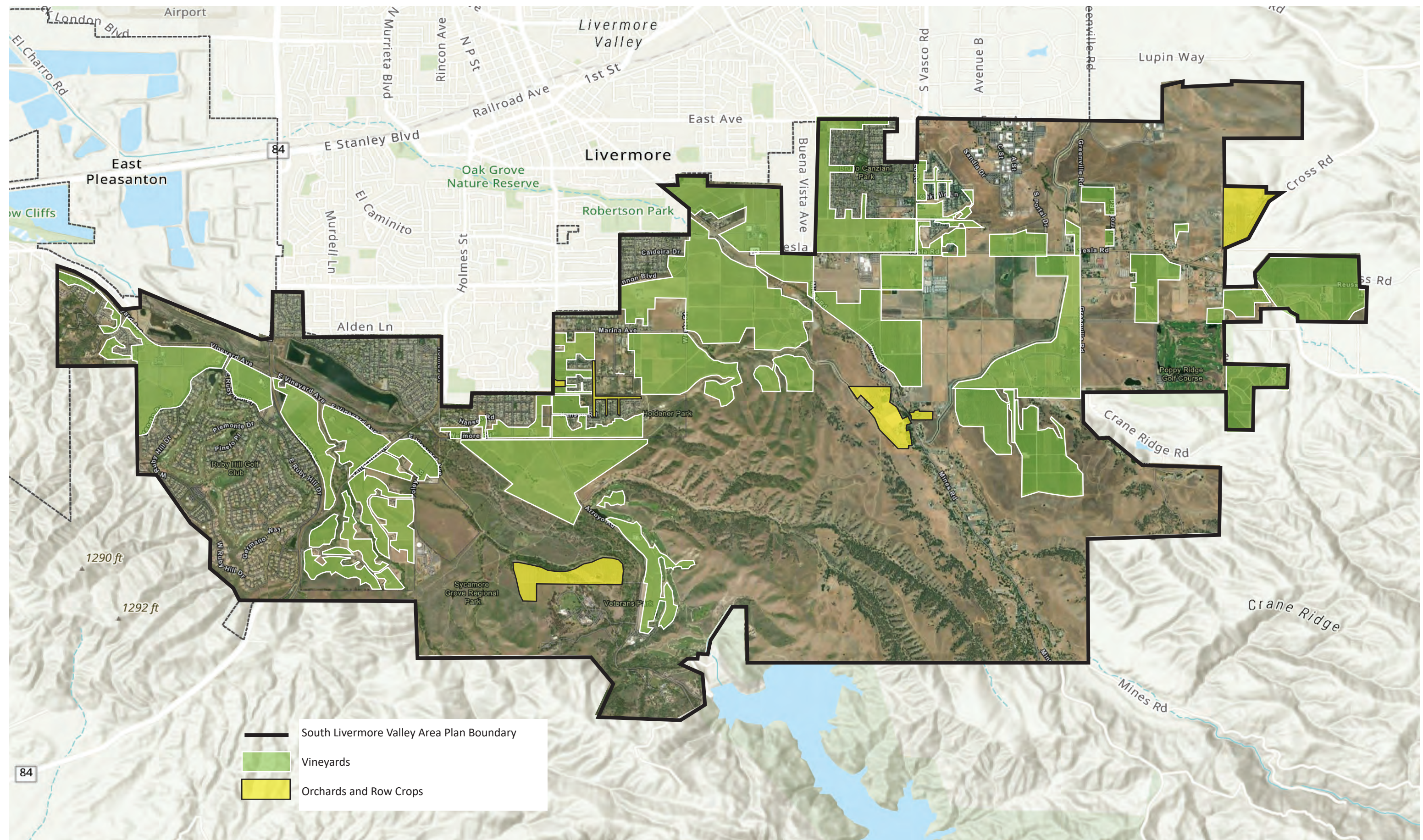
<sup>30</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 113

<sup>31</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 89

<sup>32</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 22

<sup>33</sup> Tri Valley Conservancy, *Preserving South Livermore* - 2019, accessed at:  
<https://trivalleyconservancy.org/preserving-agriculture>





**Figure 5**  
**Vineyards and Other Crops within South Livermore Valley Area Plan**

Source: Tri Valley Conservancy 2019, as updated per 2022 Google Earth aerial photography



**Table 6: South Livermore Valley – Existing Vineyards and Orchards**

	<u>Vineyard Acres</u>	<u>Orchard Acres</u>	<u>Total Planted Acres</u>
Vineyard Ave. Specific Plan Area	25	10	35
Ruby Hill	175	-	175
Vineyard Estates	350	-	350
SVSP On-Site	610	110	720
Vineyard Area	<u>1,790</u>	<u>230</u>	<u>2,020</u>
<b>Total:</b>	<b>2,950</b>	<b>350</b>	<b>3,300</b>

Source: Tri Valley Conservancy 2019, and GoogleEarth imagery 2023

Note: The difference between the estimated vineyard acreage presented in *Realizing the Heritage* and the acreage as calculated for this Study is less than 5%, which may account for differences in methodology and assumptions, as well as changes in planted acreage over time (between 2020 and 2023).

In a separate study prepared by Zone 7 of the Alameda County Water Agency (Zone 7), they report a total of 3,800 acres of vineyards and 200 acres of other crops as irrigated lands in the year 2020.<sup>34</sup> However, according to Zone 7, their acreage numbers do not distinguish between current vineyard and fallowed vineyard (only current vineyard estimates are assumed in this Study), and their irrigated land use numbers represent total acreage over the entire groundwater basin, not just the South Livermore area.

### 3.7 - Conservation Easements and Public Lands/Parks

#### Conservation Easements

The 1993 County ECAP (Program 129) envisioned the establishment of a South Livermore Valley Agricultural Land Trust as an autonomous non-profit corporation with federal and State tax-exempt status. The Trust would be enabled to purchase or accept donations of lands in the South Livermore Valley, in fee or easement, that will further the goals of the SLVAP. Following the County's adoption of ECAP, the South Livermore Valley Agricultural Land Trust was established in 1994 to preserve and protect important agricultural and open space lands. Agricultural mitigation funds required to be paid by the Ruby Hill development, as well as other sources, were to fund the Trust's initial purchases.

Over time, the Land Trust recognized the need to have a greater conservation presence in the region and expanded its geographic area to cover the entire Tri Valley area (the cities of Livermore, Pleasanton, Dublin, San Ramon and Sunol). The South Livermore Valley Agricultural Land Trust was renamed the Tri-Valley Conservancy (or TVC). The TVC also expanded their operational mission to include not only agricultural protection and preservation, but also preserving and protecting open space, habitat and parkland, promoting the Tri Valley's agricultural economy, and working to nurture a conservation ethic especially among the region's young people. The mission of Tri-Valley Conservancy (TVC) is to "*promote economically sustainable vineyards and orchards, and increase permanently protected, biologically diverse open spaces.*"<sup>35</sup>

To accomplish this mission, one of the tools that the TVC relies on is conservation easements. The TVC works with willing landowners to acquire the development rights of a property through a voluntary legal arrangement of a conservation easement, which ensures that the property will be protected from future

<sup>34</sup> Zone 7, *2020 Urban Water Management Plan*, June 2021, page 4-1

<sup>35</sup> Tri-Valley Conservancy (TVC), accessed at: <https://trivalleyconservancy.org/about-us/>

development. A conservation easement allows the property owner to retain ownership and to use the land for agricultural or other conservation purposes, and to sell the land or pass it on to heirs with the easement attached, but limits or restricts development for non-conservation purposes. The TVC is then responsible for making sure the easement's terms are followed on a long-term basis. Another tool of the TVC is direct land acquisition or purchasing a property to preserve the land's resources. Once land is preserved (through easement or acquisition) the TVC takes on a land stewardship role to best protect its resources.

According to their website, the Tri-Valley Conservancy now holds conservation easements on more than 4,500 acres across over one hundred properties, including 3,881 acres of farms and agriculture and 643 acres of habitat land. The TVC has also worked to secure an additional 500 acres of parks and open space lands, including the purchase of 74 acres that was added to Sycamore Grove Park in South Livermore Valley.<sup>36</sup>

A map of the TVC's current (as of 2019) conservation easements is shown on **Figure 6**.

### Public Open Space Parks

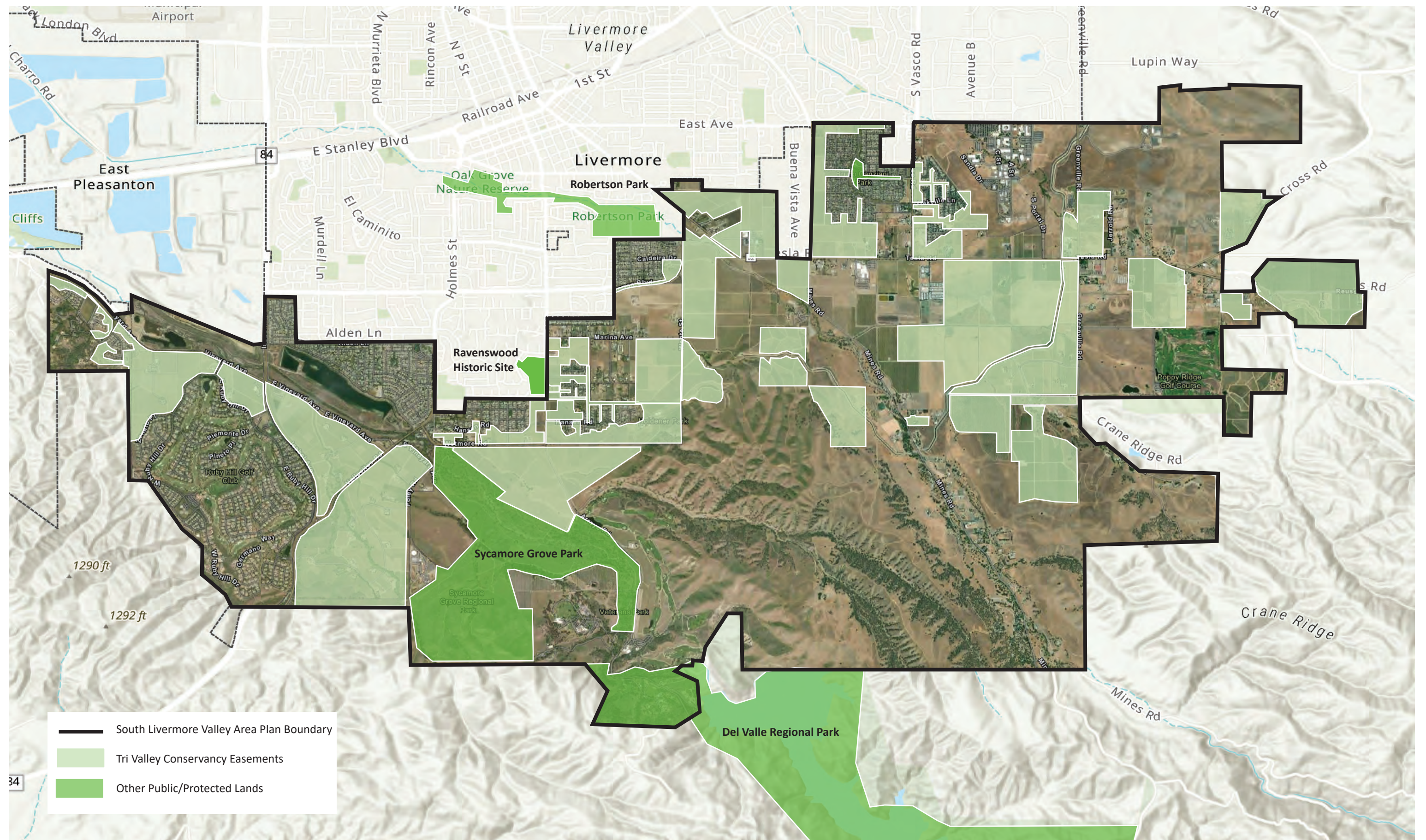
The South Livermore Valley has a number of open space and recreational amenities that contribute to the attractiveness of the South Livermore Valley as a visitor destination, as described below and shown on **Figure 6**.

- *Sycamore Grove Park*: The Livermore Area Recreation and Park District (LARPD) owns and operates the Sycamore Grove Park regional park, which includes the Arroyo del Valle corridor and one of the largest remaining stands of Western Sycamores in the U.S. Veterans Park, which is located adjacent to Sycamore Grove Park, also consists of open space and natural parkland with group picnic facilities.
- *Ravenswood Historic Site*: Ravenswood Historic Site is a special use park as a National Register-listed 19th century vineyard estate, with Victorian-style structures, vineyards and winery ruins. The site has been renovated by LARPD and is used for meetings and special events. Proposals have been explored by LARPD and the Friends of the Vineyards about the possibility of building a wine museum at the south end of the Ravenswood site, on land that is currently undeveloped.
- *Robertson Park*: Robertson Park is a 133-acre regional park located along both sides of Arroyo Mocho and is a developed urban park that includes lighted ballfields, soccer fields and other active recreation facilities. The park also includes a major equestrian center including a stadium that serves as home to the annual Livermore Rodeo.
- *Del Valle Regional Park*: Del Valle Regional Park is a 4,000-acre recreation area surrounding the Del Valle Reservoir. Located in the foothills, this regional park is managed by the East Bay Regional Park District (EBRPD) for the California Department of Parks and Recreation. The park offers boating, fishing, sailboarding, swimming, picnicking and hiking.

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<sup>36</sup> <https://trivalleyconservancy.org/what-we-do/protect-land/preserving-land/>





**Figure 6**  
**Conservation Easements and Public Lands**

Source: Tri Valley Conservancy, 2019, accessed at:  
<https://trivalleyconservancy.org/preserving-agriculture/>



## 3.8 - Commercial Uses

### Wineries

The 2022 *Realizing the Heritage* report provides a comprehensive list of Livermore Valley wineries. The original source of the winery data was from a firm that studies the U.S. wine industry and tracks California wineries. According to data presented in *Realizing the Heritage*, there were 48 wineries in Livermore Valley in 2019.<sup>37</sup> However, 3 of those wineries are actually vineyards with little wine production, leaving 45 operating wineries within the Livermore Valley as of 2019. Most of Livermore Valley's wineries are located along Tesla Road between South Livermore Avenue and east of Greenville Road, including the Wente winery that has been there since 1884. Secondary concentrations of wineries are found along Greenville Road south of Tesla Road, and along small roads that branch off Tesla Road. The Arroyo Valle area between Ruby Hill and Hanson Road was home to most of Livermore's early wineries in the 1880s including the now-historic Ravenswood winery site, and still includes several of Livermore Valley's remaining wineries.

There is also a light industrial district within the city of Livermore, located along South Vasco Road south of East Street, which has been transformed into an "urban wine, brewery and spirits district". Nearly a quarter of Livermore Valley's 45 wineries are located within this industrial wine district, which is served by City of Livermore water and wastewater infrastructure.

*Realizing the Heritage* reported that the Livermore Valley Winery Association's website listed 30 wineries that were members of the Association in 2019. A more recent (April 2023) update of the Livermore Valley Wine Community's (LVWC) website now shows 41 wineries as members of its association.<sup>38</sup> As many as 7 of the wineries present in 2019 and identified in *Realizing the Heritage* could not be found as currently being in operation, whereas 7 new wineries are now members of the LVWC. The number of current wineries in the Livermore Valley is again now estimated at 45 wineries, as shown on **Figure 7**.

Many wineries in the Livermore Valley produce wine from grapes that are grown outside the Livermore Valley, as well as grapes grown within the Livermore Valley. Conversely, not all the grapes grown on Livermore vineyards are used by Livermore wineries:

- Wente Vineyards and Concannon wineries are largely self-sufficient in grapes, growing their own grapes in their own (or managed) vineyards
- The next 5 larger wineries relied on approximately 555 acres (about 19%) of Livermore Valley vineyards
- The remaining approximately 38 smaller Livermore wineries collectively required production from only about 330 acres (or 12%) of Livermore Valley vineyards

In total, grapes from about 1,900 acres of Livermore Valley vineyards (or approximately two-thirds of all vineyard lands within the Valley) were required by Livermore's current winery production. This leaves the production of grapes from about 900 acres, or almost one-third of Livermore's total vineyard acreage (and approximately half of the independent vineyard acreage) being exported out of the Livermore Valley at prevailing spot-market prices for coastal grapes.<sup>39</sup>

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<sup>37</sup> Lapsley and Sumner, "Realizing the Heritage", Table 12

<sup>38</sup> Livermore Valley Wine Community, accessed at: <https://www.lvwine.org/wineries.php>

<sup>39</sup> Lapsley and Sumner, Realizing the Heritage, page 15







## Equestrian Facilities

In a separate Alameda LAFCO Special Study prepared in 2022, that Study referenced an “Equine CUP Streamlining Project Report” of October 2003, which stated that *“the equine industry [in Alameda County] has been increasingly challenged over the years to accommodate business and regulatory changes. Although there is no definitive horse or facility census for a trend analysis, it is apparent that many facilities have closed. Facilities close for many reasons, including retirement, lack of profitability, displacement by development, competition with other outdoor activities, and the costs of meeting new regulatory demands”*.<sup>40</sup>

That same 2022 LAFCO Special Study also found that, although the number of horse-related facilities appear to have decreased, the demand for equine-industry products and services continues to grow, evidenced by the growing miles of equine and multi-use trails and trail plans in the Bay Area, and horse owners relate the need to travel outside the County to find boarding vacancies. Ensuring that stables remain economically viable reduces pressure for more intense development.

Whereas countywide equestrian facilities may have been/are in decline, the Livermore Valley appears to have a robust equestrian presence. Based on a current internet search, there are eight separate equestrian-based operations within the Livermore Valley providing horse boarding/stables, riding lessons and advanced equestrian training, and horse rescue operations. These existing equestrian facilities are also shown in **Figure 7**.

## Golf Courses

The Livermore Valley is home to three prestigious golf courses (see also **Figure 7**).

- The Ruby Hill development (see description above) includes a 225-acre Ruby Hills Country Club and golf course.
- Poppy Ridge Golf Course is an 18-hole, Northern California Golf Association (NCGA) approved golf course located on 280 acres east of Greenville Road, opposite the Crane Ridge Vineyards. The golf course was approved as a stand-alone facility that does not have any residential development proposed adjacent to it. Construction of the Poppy Ridge Golf Course was completed in 1997.
- The Course at Wente Vineyards is located at the south end of Arroyo Road, east of Sycamore Grove Park and the VA Hospital. The course was designed to follow the eastern edge of the valley, with vineyards located between the course and Arroyo Road. The golf course occupies 120 acres. As with the Poppy Ridge Golf Course, no residential development is associated with the Course at Wente Vineyards. The course is associated with the Wente Brothers Sparkling Wine Cellars, restaurant and concert site.

Taken together, these three golf courses occupy approximately 625 acres of land.

## Cannabis

The only fully permitted and operating cannabis facility within the SLVAP is a retail operation, Garden of Eden at Highlands, at 7000 Tesla Road (at the Darcie Kent Winery), the first cannabis business to open in the unincorporated East County area near Livermore. The facility was approved by Alameda County in May of 2022. Cannabis is not grown and may not be grown at this property. Two sites have pending cannabis cultivation applications (as Conditional Use Permits) pending, one at 9249 Tesla Road and one at 8588 Tesla Road.<sup>41</sup>

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<sup>40</sup> Alameda County, Equine CUP Streamlining Project Report, October 2003

<sup>41</sup> Personal communication, Alameda County Planning Department, 2023

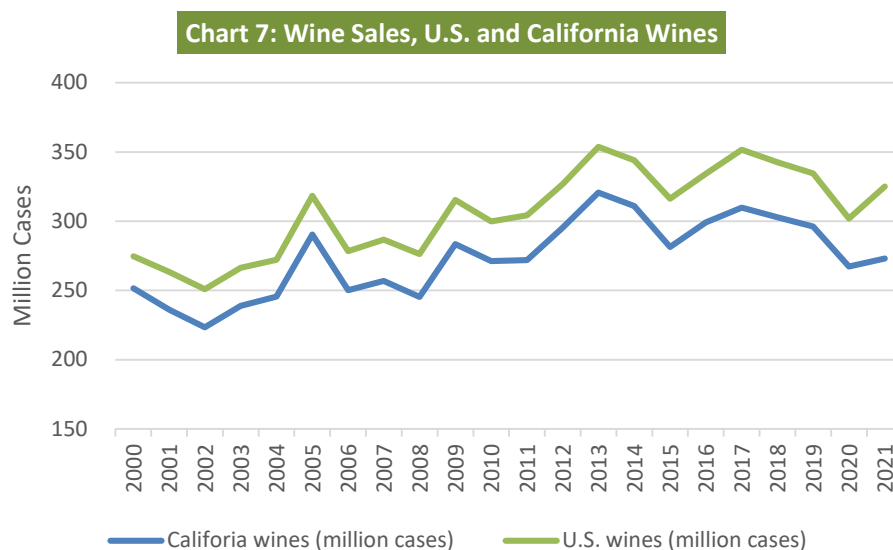


### 3.9 - Economic Outlook for Livermore Valley Wineries

#### Macro-Economics of California Wine Industry

##### Economic Trends of Wine Industry in California

The United States produces approximately 12 percent of the world's wine. California produces between 80 and 85 percent of all wine made in the United States (see **Chart 7**) and is the world's fourth largest producer of wine behind only Italy, Spain and France. California also has the largest number of wineries in the country, with about 4,800 bonded wineries, comprising nearly half of the approximately 10,043 wineries in the country.<sup>42</sup> According to the Wine Institute, California's wineries shipped over 273 million cases of wine to all markets in the U.S. and abroad in 2021, including more than 238 million cases of wine to U.S. markets. However, as shown in Chart 4, the volume of California wines sold (in cases) peaked around the years 2013 to 2016, and sales volume has been in general decline since then (but with a sharp improvement after a significant drop during the 2020 pandemic year).<sup>43</sup>



Source: Wine Institute, accessed at <https://wineinstitute.org/our-industry/statistics/california-us-wine-production/>

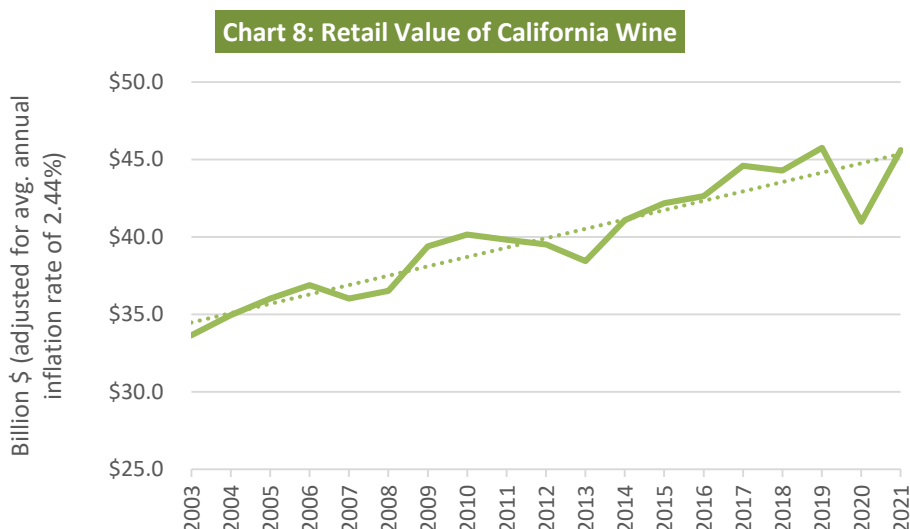
The Wine Institute portrays a different trend in the retail value of California wine sales. Wines shipped to the U.S. markets was estimated at a retail value of \$45.6 billion (estimated retail value includes markups by wholesalers, retailers and restaurateurs). Since 2003, the retail value of California wines has increased by about 35 percent, representing a relatively consistent average annual increase of about 2 percent, year on year (see **Chart 8**), although also suffering from a significant drop during the 2020 pandemic year.<sup>44</sup> Many

<sup>42</sup> National Association of American Wineries, accessed at <https://wineamerica.org/policy/by-the-numbers> and <https://www.winecountry.com/blog/california-wine-facts/#:~:text=The%20majority%20were%20red%20grapes,wineries%20in%20the%20entire%20country.>

<sup>43</sup> Wine Institute and the California Association of Winegrape Growers, *The Economic Impact of California Wine and Grapes*, 2022, accessed at: <https://wineinstitute.org/our-industry/statistics/california-us-wine-production/>

<sup>44</sup> <https://wineinstitute.org/our-industry/statistics/california-us-wine-sales/>

wine experts attribute the difference between wine volume sales and wine retail value to a general shift in consumer preferences for higher quality and more expensive wines.



Source: Wine Institute, accessed at <https://wineinstitute.org/our-industry/statistics/california-us-wine-sales/>

According to a *State of the Wine Industry Report*, many of the economic trends in wine sales (volume versus value) are highly driven by demographics. This report indicates that, “consumers older than 60 are the only growth segments, and consumers younger than 60 have a lower share of wine consumption compared to what they did in 2007. While older consumers are paying more for premium wine, younger buyers are increasingly less engaged with the wine category.”<sup>45</sup>

Projections about the future of the wine business range from pessimistic, to cautious, to optimistic:

- “the wine category will continue to fight off ongoing challenges in 2023, according to IWSR, with the long-term trend of slowly declining volumes in many markets expected to continue”<sup>46</sup>
- “analysts expect demand for wine to remain healthy, driven by a limited reopening of tourism, restaurant and event traffic. . . and many expect to see modest improvements in wine sales and grape values”<sup>47</sup>
- “The California wine industry cannot be complacent. It faces challenges that include more competition from other imports and other American wine producers, but the growing reputation for quality, the increasing willingness of consumers to pay for higher quality, and the wine industry’s ability to innovate bode well for its success.”<sup>48</sup>

<sup>45</sup> Silicon Valley Bank (now a division of First Citizens Bank), “*State of the Wine Industry Report, 2023*”, accessed at: <https://www.svb.com/trends-insights/reports/wine-report>

<sup>46</sup> The Drinks Business, <https://www.thedrinksbusiness.com/2023/03/slow-decline-of-global-wine-volumes-set-to-continue-iwsr-says/#:~:text=Wine%20volumes%20for%20H1%202021,fall%20in%20many%20core%20markets>

<sup>47</sup> <https://www.agloan.com/2022-q1-wine-industry-trends-and-forecast>

<sup>48</sup> Rachael E. Goodhue, Richard D. Green, Dale M. Heien, and Philip L. Martin, “*Current Economic Trends in the California Wine Industry*”, Giannini Foundation of Agricultural Economics, University of California Davis, 2007

## Business Trends in the California Wine Industry

An older (2007) UC Davis report, *Current Economic Trends in the California Wine Industry*, provided insights about California's wine industry that are still relevant, and perhaps more so, today. As indicated in that 2007 report, while "the number of wine grape growers had increased slightly in the past decade, the number of wineries doubled to 2,900, [which has now substantially increased to as many as 4,800 bonded wineries in California, the opposite of a general consolidation trend in food processing. Within the winery sector, there is significant consolidation. Like other food-sector firms, a combination of economic and marketing forces is encouraging wineries to be either small enough to sell most of their wine directly to consumers, or large enough to have clout with distributors and retailers. The top three California wineries accounted for nearly 60 percent of total wine shipments, and the top ten California wineries accounted for 85 percent of total shipments. An important part of the large firms' recipe for success is their ability to offer distributors and large retailers a range of labels at different price points. Smaller California wineries often aim to sell three-quarters or more of their wine directly to consumers, many of whom visit the winery to taste the wine. Direct sales eliminate distributor and retailer mark-ups as well as winery-incurred shipping costs. Mid-size wineries [defined as more than 10,000 cases per year] face challenges, as they are too large to depend on direct-to-consumer sales, but too small to attract the attention of major distributors or retailers. Wineries in the middle between direct sales and multiple labels and marketing clout may have to seek a new business model. Mid-size wineries could shrink and follow the small-producer strategy, grow and follow a large-producer strategy, or become part of a large producer's brand portfolio via mergers and acquisitions."<sup>49</sup>

### **Micro-Economics of Livermore Valley Wineries**

The Livermore Valley's winery industry is vitally important to the local economy but represents a very small share of the overall California wine industry's economic activity. The following relative comparisons put the scale of Livermore Valley wineries (which are assumed to represent virtually all of Alameda County's winery industry) in perspective of the overall California wine economy:

- Livermore Valley's 45 wineries represent about 1% of California's 4,800 bonded wineries<sup>50</sup>
- Livermore Valley wineries were estimated to produce about 977,050 cases of wine in 2019,<sup>51</sup> representing less than 1% of the 238 million cases of California-wide wine production<sup>52</sup>
- Approximately 415,800 tourists visited Alameda County wineries in 2022, spending approximately \$276 million dollars. This representing about 2% of the 23.6 million winery tourist statewide, and nearly 4% of the \$7.2 billion in statewide winery tourism spending (including retail wine, hotels, restaurants and other venues)
- The wine industry in Alameda County generated an estimated \$2.4 billion in annual economic activity, representing just over 3% of California's \$73 billion in total annual wine industry economic activity (which is inclusive of employment, wages, taxes, tourism spending, visits, and charitable giving)<sup>53</sup>

Although Livermore Valley represents a small share of California's vast winery industry, the business trends in Livermore Valley do reflect the statewide trend is business consolidation. Data that is presented in *Realizing*

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<sup>49</sup> Ibid

<sup>50</sup> Discover California Wines, "California Wines Profile" accessed at: [https://discovercaliforniawines.com/wp-content/uploads/2022/08/CAWines-Profile-Aug\\_2022.pdf](https://discovercaliforniawines.com/wp-content/uploads/2022/08/CAWines-Profile-Aug_2022.pdf),

<sup>51</sup> Lapsley and Sumner, *Realizing the Heritage 2022*, page 29 - Table 1.2: Livermore Wineries by Case Production

<sup>52</sup> Discover California Wines, "California Wines Profile"

<sup>53</sup> John Dunham & Associates, "*Economic Impact of California Wine and Grapes 2022*", commissioned by the Wine Institute and the California Association of Winegrape Growers, 2023



*the Heritage* is now a few years removed, but is still the best source of local information and provides several important characteristics about Livermore Valley wineries that likely remain accurate: <sup>54</sup>

- Of the 48 Livermore Valley wineries existing in 2019, two wineries (Wente and Concannon) produced about 82% of all wines sold
- These two large wineries, plus 5 more mid-sized wineries (those producing more than 10,000 cases of wine per year), or 15% of all Livermore Valley wineries, produced about 90% of all wines sold from the Valley

These larger and mid-sized wineries generally have a diverse sales base that includes distribution chains to national markets including grocery stores and liquor stores, with only about 20% of their wines sold directly to consumers.

- The remaining 41 smaller wineries in Livermore Valley, representing 85% of all Livermore Valley wineries, sold only about 10% of all wines sold from the Valley

Sales from these smaller Livermore wineries were much more dependent on direct sales to customers (e.g., online sales or direct sales at the winery and tasting rooms), with direct-to-consumer sales representing approximately 75% of all sales for all these other wineries. Most of the smallest wineries rely almost entirely on direct-to-consumer sales. As indicated in *Realizing the Heritage*, “the focus on cellar-door sales makes sense for the smaller individual wineries, as most do not seem to have the resources or desire to compete with other wineries for sales to retailers or wholesalers”. <sup>55</sup>

Most of Livermore’s smaller wineries that rely almost entirely on the direct-to-consumer sales approach are operating on the edge of profitability. As one winery owner put it, “*We have generally just broken even. We have professional jobs outside the winery and don’t need to turn this into a profitable business. We get to experiment with different varieties and interact with interested consumers. We do it for the fun, not the money.*”<sup>56</sup> These smaller wineries’ direct-to-consumer sales approach provides their consumers with a personal engagement with the winery and its operators, may provide an enjoyable and informative experience. These small wineries also fulfill an important niche by creating a draw of visitors that take advantage of the Valley’s other winery tourism industries.

The lack of profit margins for these small wineries does not mean their business models aren’t viable, only that these businesses do depend on outside financing and the continued enjoyment of operating these businesses by the owners. These businesses are also at risk if the tourism/visitor sales cycle is disrupted (as evidenced by the large number of Livermore wineries that closed due to the pandemic) and are at risk from unexpected business operation expenses or demands (i.e., new regulations regarding winery process water disposal).

On a broader land use planning perspective, the annual grape crush represented by these numerous small wineries does not generate a substantial demand for Livermore Valley grapes (the smallest 40 wineries collectively require the output of only about 250 acres of Livermore’s vineyards), and even a substantial increase in the number of these smaller wineries could not justify increasing the size of the Valley’s existing vineyard acreage.

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<sup>54</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 29 - Table 1.2: Livermore Wineries by Case Production

<sup>55</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 99

<sup>56</sup> Ibid

## Chapter 4: State Water Board Waste Discharge Requirements for Wineries

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Winemaking is an important industry that has generated as much as \$71 billion for the California economy. Winemaking also generates process water that has the potential to degrade groundwater quality depending on winery-specific activities, size and treatment processes. The primary concerns for winery process water that effects groundwater quality are nitrogen, salinity and biochemical oxygen demand. In 2001, the State Water Board adopted a General Waste Discharge Requirements for Winery Process Water (General Order) that applies to wineries statewide, which includes requirements to ensure winery operations effectively mitigate adverse impacts to water quality. These General Order requirements have potentially significant implications on those Livermore Valley wineries that are not served by a municipal sewer system, as further summarized in the following chapter of this Special Study.<sup>57</sup>

### 4.1 - Winery Process Water

The late fall of each year (September through November) is when wineries typically harvest grapes to make wine. This period is known as the crush. Typical wine production during the crush involves harvesting and crushing grapes, fermentation, clarification, aging and storing, blending, and bottling. Other operations include facility cleaning, which involves washing processing equipment, floors, tanks, barrels and bottles. Other sources of water use include cleaning chemicals, spilled wine or juice, water softener regeneration brine, and boiler or cooling tower blowdown. During these wine production and cleaning processes, much of this water does not become wine, but becomes what is known as “winery process water”, or excess water used in the wine making process. Some wineries operate year-round, generating process water during the off-season from blending, bottling, and cleaning. The amount of process water used during these operations varies based on the specific operations of each winery, but wineries can use as much as 6 to 16 liters of water per liter of wine produced.<sup>58</sup>

Process water is typically collected at the winery using floor drains and trenches, piping, pumps, tanks and other ancillary equipment. Those wineries not connected to a municipal sewer system typically rely on ponds, land application and/or subsurface disposal systems to treat, reuse and/or dispose of their process water.

- Process water ponds provide process water storage, mixing, equalization, treatment, disposal and operational flexibility for wineries. Most ponds settle suspended solids, ponds with aeration reduce biochemical oxygen demand (BOD), and ponds with alternating aerobic and anoxic zones remove nitrogen. Constructed wetlands associated with a pond can further reduce BOD and nitrates and are effective as a “polishing step” prior to land application. Pond size and land disposal acreage are interrelated, as more available pond storage means less area is needed for land application or subsurface disposal, and vice versa. This balance is determined by site conditions and constraints, process water volume and quality, treatment objectives, costs and operational resources.
- Land application is a strategy to beneficially reuse process water to grow crops. Because winery process water contains organic matter and nitrogen, land application generally improves soil productivity and provides supplemental plant nutrients, while simultaneously treating and disposing of the process water. Dissolved solids in process water include plant macronutrients (e.g., ammonium, nitrate, phosphorous

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<sup>57</sup> California State Water Resources Control Board (Water Board), Order WQ 2021-0002-DWQ General Waste Discharge Requirements for Winery Process Water, January 20, 2021

<sup>58</sup> Journal of Water Science & Technology, accessed at:  
<https://iwaponline.com/wst/article/80/10/1823/71671/The-impact-of-the-winery-s-wastewater-treatment>

and potassium) that are removed by those land application systems that incorporate growing and removing crops.

- Subsurface disposal systems generally consist of a treatment unit and a subsurface disposal area (e.g., a drain field, infiltration gallery or dispersal area). Treated process water is discharged via gravity flow or a low-pressure distribution system to a subsurface disposal area. Plants grown at the subsurface disposal area can provide some additional treatment. Although more commonly used by smaller wineries, larger wineries with limited land application area or pond capacity also use subsurface disposal systems, or a subsurface disposal system in conjunction with land application. The siting, design and operation of a subsurface disposal system depends on site conditions, groundwater elevation, process water volume and characteristics, and soil properties.

Each of these methods for treating, reusing and/or disposal of winery process water have the potential to introduce constituents that may degrade groundwater quality. The primary constituents of concern in process water are nitrogen, biochemical oxygen demand (BOD), and salinity. Grape juice, wine, pomace and cleaning chemicals can also contribute nitrogen, BOD, and salinity.

#### Nitrogen

Winery process water has generally low levels of nitrate, but high concentrations of ammonia and organic nitrogen that can readily mineralize and convert to nitrate in soil. Excessive application of winery process water and other nitrogen-containing materials can result in nitrate leaching and groundwater degradation.

#### Salinity

Total dissolved solids (TDS) is a measurement of salinity, and consists of volatile (organic) and fixed (inorganic) elements. A significant proportion of winery process water is made up of volatile dissolved solids which break down in soil. The fixed dissolved solids (FDS) portion does not degrade biologically and is the primary salinity constituent of concern. Excessive salinity loading from process water, supplemental water, fertilizer, and soil amendments can impact the beneficial uses of groundwater and soil hydraulic conductivity.

#### Biochemical Oxygen Demand

Bio-degradable organic matter (measured as BOD) increases soil productivity, soil fertility and crop production, but excessive BOD application to land can result in nuisance odors and anaerobic conditions not favorable to biological treatment conditions, and can mobilize metals such as iron and manganese. Excessive BOD loading to ponds can lead to anaerobic conditions, impact process water treatment, and cause nuisance odors.

## 4.2 – State Water Board’s Purpose in Establishing the General Order

The California Water Code defines winery process water as ‘waste’, and since the discharge of winery waste can affect the quality of waters of the state, such discharges are subject to regulation pursuant to the California Water Code. Any person discharging winery process water or proposing to discharge winery process water in any manner other than to a community sewer system must file a report of waste discharge (ROWD) and obtain coverage under a Waste Discharge Requirement (WDR) or a waiver of WDR.

The State Water Board estimates that there are approximately 4,580 wineries in California, and approximately 3,612 of these wineries are bonded (i.e., licensed to manufacture, sell, purchase, possess and transport alcoholic beverages within the state). Of these bonded wineries, approximately 2,070 wineries (57%) dispose of their process water waste to land, and the remaining 43% of the state’s bonded wineries discharge to a community sewer system or other method. The Water Board also estimates that only about 16 percent of the bonded wineries that discharge to land have existing individual WDR permits or conditional



waivers to dispose of their winery waste. There is a substantial backlog of individual winery permitting throughout the state.

Pursuant to the Water Code, the State Water Board may prescribe General WDRs for a category of discharges if the discharges are produced by the same or similar operations, involve the same or similar types of waste, require the same or similar treatment standards, and are more appropriately regulated under general WDRs than individual WDRs. Discharges to land from winery process water and waste treatment and disposal systems have certain common characteristics such as similar constituents, concentrations of constituents, and disposal techniques, and they require the same or similar treatment standards. Therefore, the Water Board has found that winery process water discharges are more appropriately regulated under a General WDR. A General WDR provides a set of consistent standards and regulations that apply statewide, and the permit streamlining process pursuant to a General WDR allows the Regional Water Boards to focus on issues related to compliance, rather than issuing thousands of site-specific permits. According to the Water Board, the General Order was requested by winemakers to address inconsistencies in permitting statewide for winery process water, and the State Water Board collaborated with the wine industry and other stakeholders by soliciting and incorporating feedback throughout development of the General Order.

#### Nitrogen Loading

The Water Board's General Order requires land application of process water nutrients at agronomic rates and discharge of process water treated to meet an identified nitrogen effluent limit prior to subsurface disposal to preclude the creation of pollution, contamination or nuisance. Some of the nitrogen in the process water will be lost to the atmosphere, stored in the soil matrix or taken up by plants when applied to cropped (or landscaped) land. As a result, land application at an agronomic rate and subsurface disposal of process water treated to the General Order's effluent limit are unlikely to impair beneficial uses of groundwater.

#### Salinity Control

Source control is the best approach for addressing salinity. A number of chemical replacements for sodium-based chemical compounds are available that can reduce the salinity of winery process water. Compliance with the General Order includes implementation of minimum salt control BPTC measures, and additional salt controls in response to exceedances of fixed dissolved solid threshold to control salinity in discharges and protect water quality.

#### BOD Controls

Compliance with the Water Board's General Order includes a BOD loading limit, effluent limits, and implementation of best practicable treatment or control (BPTC) measures to control the generation of nuisance odors, provide adequate treatment, and protect water quality.

### **4.3 - Components of the General Order <sup>59</sup>**

#### **Tiered Enrollment Schedule**

Wineries that direct all process water to a community sewer system are not required to apply for General Order coverage.

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<sup>59</sup> State Water Board, General Waste Discharge Requirements For Winery Process Water (Order WQ 2021-0002-DWQ), January 20, 2021, accessed at: [https://www.waterboards.ca.gov/water\\_issues/programs/waste\\_discharge\\_requirements/winery\\_order.html](https://www.waterboards.ca.gov/water_issues/programs/waste_discharge_requirements/winery_order.html)

- It is estimated that 10 of Livermore Valley’s approximately 45 wineries are located within a thriving winery district at the southwest corner of South Vasco Road and East Avenue in the City of Livermore. This district is served by the City of Livermore’s municipal sewer system, and these wineries will not require coverage under the General Order.

Those existing wineries that are already covered under an individual WDR, general WDR, or conditional waiver to WDR may continue discharging under those permits until they expire or come up for renewal. At that time (or earlier at the discretion of the Regional Water Board), it is intended that those wineries will re-enroll under the General Order.

- Within the Livermore Valley there are many wineries, including Concannon and Wente, plus the wineries located within Crane Ridge and the Beyer Ranch areas, that currently discharge winery process water under existing WDRs. When these individual or group WDRs expire, these wineries will be required to enroll under the General Order.<sup>60</sup>

All other wineries that are not served by a municipal sewer system or already covered under a separate WDR will be required to submit a Notice of Intent (NOI) and an associated Technical Report to enroll in the General Order by January 20, 2024. Full compliance with the General Order must occur within 5 years of the date of the NOI.

### **Tier-Based Limits and Reporting**

Wineries that are authorized under the General Order are classified into regulatory tiers based on the annual process water flow from the facility. The application requirements, fees, and monitoring and reporting requirements are connected to and commensurate with the complexity of the discharge regulated under each tier. The General Order’s tiers include:

- Exempt (less than 10,000 gallons per year)
- Tier 1 (10,000 to 30,000 gallons per year)
- Tier 2 (30,001 to 300,000 gallons per year)
- Tier 3 (300,001 to 1,000,000 gallons per year), and
- Tier 4 (greater than 1,000,000 gallons per year)

Exempt wineries are not required to enroll under the General Order. However, exempt wineries that violate General Order prohibitions or exempt status conditions or are otherwise determined to pose a threat to water quality (which can include a large concentration of wineries in a specific area), may no longer qualify for exempt status and may be required to apply for General Order coverage as a Tier 1 facility.

Tier 1 wineries are considered to have a low potential for degrading water quality provided they comply with General Order requirements. These smaller wineries are required to apply for General Order coverage as a Tier 1 facility. A large concentration of Tier 1 wineries in an area may pose a higher threat to water quality and result in groundwater degradation and may be required to apply for General Order coverage as a Tier 2 facility.

The annual process water flows from each winery in the Livermore Valley is dependent on several factors that may vary from winery to winery based on each wineries’ water use. If all Livermore Valley wineries practice significant water, conservation strategies and can achieve ratios of about 6 liters of water per liter of

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<sup>60</sup> The Water Board’s 2017 WDR for Concannon cites the Revised Wastewater Management Plan, which includes a connection to the City of Livermore’s publicly owned treatment works for discharge of all sanitary waste from the facility, and as a backup discharge location for treated winery wastewater

wine produced, the approximately 40 Livermore Valley wineries subject to the General Order (those not served by municipal sewer) may generally fall under the following categories:

- Perhaps 4 or 5 of Livermore Valley's smallest wineries may fall under the "Exempt" category
- Perhaps 10 to 12 of Livermore Valley's smaller wineries may fall under the "Tier 1" category
- Perhaps 17 to 18 of Livermore Valley's mid-sized wineries may fall under the "Tier 2" category
- Perhaps 3 of Livermore Valley's larger wineries may fall under the "Tier 3" category, and
- It is likely that the Wente winery will fall under the "Tier 4" category, as would the Concannon winery if their Livermore sewer connection remains as a backup discharge location for treated winery process wastewater.<sup>61</sup>

## **General Specifications for Ponds, Land Application and Subsurface Disposal Areas**

### Ponds

Undersized ponds can lead to process water spills, insufficient treatment, anaerobic conditions and nuisance odors. To minimize these problems, the General Order requires ponds be sized to meet a 100-year, 24-hour peak storm design standard. Small ponds are required to meet a 25-year, 24-hour peak storm design standard at a minimum. The Discharger is also required to submit a technical report describing how a smaller pond will be operated without overtopping under 100-year, 24-hour peak storm conditions.

- Tier 1 and Tier 2 facility ponds generally contain smaller amounts of process water for a shorter period of the year and pose a smaller threat to water quality if the ponds are properly maintained and in good working condition. Therefore, Tier 1 and Tier 2 wineries with existing ponds may continue operating the ponds at their current sizes, provided they comply with all other General Order requirements. Tier 1 wineries may also construct ponds that are smaller than the peak storm design standards, provided they meet all other General Order requirements, including applicable pond specifications.

Ponds that percolate process water have the potential for degrading underlying groundwater. Ponds lined with a relatively impermeable layer (e.g., clay, concrete or geo-membrane liner) minimize percolation.

- Tier 1 and Tier 2 wineries may continue operating existing ponds at their current lined or unlined status, provided they comply with all other General Order requirements. The Regional Water Board may require ponds that are determined to have had, or have the potential for frequent or significant spills, or have the potential to cause groundwater pollution, to comply with the General Order pond capacity and/or liner requirements.
- New or expanding ponds at Tiers 2, 3, and 4 wineries must be lined to meet a hydraulic conductivity standard to prevent percolation-related degradation.
- Tier 4 wineries are required to conduct groundwater monitoring at their process water ponds unless the winery demonstrates a reduced potential for groundwater degradation and qualifies for an exemption.

### Land Application

Winery process water is often used to supplement rainfall and fresh water sources for vineyards or other crop irrigation. The General Order requires a discharger of process water used in irrigation to monitor the source water, process water and supplemental water quality to determine compliance with applicable nitrogen and biodegradable organics (measured as BOD) loading limits.

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<sup>61</sup> California Regional Water Quality Control Board San Francisco Bay Region (SFRWQCB), The Wine Group, LLC-Concannon Winery Waste Discharge Requirements, Order No. R2-2017-0010, April 2017, page 2

- To manage BOD loading, the General Order requires that land application of winery process water occur within an irrigation cycle average meeting BOD loading limits.<sup>62</sup> Field rotation, alternating wet and dry times, infiltrating water within 48 hours, and managing the hydraulic loading are all necessary to allow the soil to return to aerobic conditions. Good land application, farming practices and site controls are also required to prevent excessive hydraulic loading, nuisance conditions and off-site discharges. The land application area must be properly managed to prevent over-irrigation, which can result in runoff or ponding.
- Wineries that generate and apply larger volumes of process water inherently have a higher potential for percolation to groundwater and groundwater degradation. Therefore, Tier 4 wineries are generally required to conduct groundwater monitoring at the land application area.
- Wineries with groundwater monitoring data that demonstrate impacts to water quality may be required to evaluate the winery, treatment and disposal operations, and address and mitigate groundwater quality impacts through development and implementation of a site-specific Nitrogen Control Plan.

#### Subsurface Disposal Systems

Simple subsurface disposal systems that only provide for settling of solids provide minimal treatment. In the settling tank, solids in the process water settle out and the anaerobic conditions provide some BOD reduction, but nitrogen removal varies depending on the system design and operation. Once discharged, the effluent BOD can further biodegrade in the aerobic conditions of the subsurface disposal area and the nitrogen can be converted to nitrate. More advanced subsurface disposal systems can be designed for nitrogen and/or BOD removal. Treatment alternatives include biological filters, pretreatment in process water ponds designed for nitrification and denitrification upstream of the subsurface disposal systems, and other engineered alternatives. The General Order includes effluent limits for total nitrogen, BOD, and total suspended solids (TSS) to assess subsurface disposal systems treatment effectiveness and minimize the potential for degrading groundwater.

- Tiers 2, 3, and 4 wineries using subsurface disposal systems that exceed the total nitrogen effluent limit may be required to evaluate the winery, treatment and disposal operations, and prepare a Nitrogen Control Plan with improvements needed to comply with the limit.
- The General Order requires the discharger to implement subsurface disposal system operational controls and provide sufficient disposal area necessary to prevent excessive loading, inadequate treatment and nuisance conditions. It also requires that the subsurface disposal systems meet a maximum hydraulic loading limit to prevent excessive loading to the subsurface disposal area.
- Wineries that discharge large volumes of process water to a subsurface disposal area have a higher potential for percolation to groundwater and groundwater degradation. Therefore, Tier 4 facilities are required to conduct groundwater monitoring for subsurface disposal systems.

#### Solids Management

Coarse and suspended process solids are screened, filtered, precipitated and settled from grape juice, wine and process water. Removing solids prior to directing process water to flowmeters, storage tanks, and treatment systems minimizes system clogging, extends the life of equipment, improves treatment efficiency, and restores system capacity. Process solids are also generated from process water treatment systems. Ponds are periodically dredged to restore capacity. Sludge and scum from settling tanks are also removed as part of regular maintenance. Process solids are typically containerized or stockpiled and dried before they are

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<sup>62</sup> An irrigation cycle is made up of irrigation days and the subsequent dry days. For example, a land application area (LAA) divided into seven sections would have a 7-day irrigation cycle for each section if each received one day of application followed by six days of drying.



applied to land as a soil amendment or disposed of off-site. Onsite composting and reuse of process solids are encouraged.

### Salt Control

Effective strategies to minimize salt concentration (measured in fixed dissolved solids - or FDS) in process water include facility source control, chemical substitution and recycling, good housekeeping, solids removal, and other best practice measures. Most of these measures aim to keep salts out of process water. Salt reduction technologies (e.g., reverse osmosis) are available but can be expensive, so are not as widely used. Minimum Best Practicable Treatment or Control measures for salt control generally consisting of good housekeeping, source control and reduced salt usage, and solids screening and management, and are required compliance measures of the General Order.

- This General Order requires Tiers 2, 3, and 4 facilities to compare winery effluent FDS concentrations to an FDS threshold to determine if additional measures are needed at the facility to control salt and minimize the potential for groundwater degradation. The FDS threshold is based on reasonable Best Practicable Treatment or Control measures that can be implemented at wineries to minimize salinity impacts to groundwater.
- Facilities that exceed the FDS threshold may be required to evaluate the winery, treatment and disposal operations, discuss findings, and propose improvements to reduce effluent FDS in a Salt Control Plan. An exceedance of the FDS threshold is not a violation of the General Order, but the General Order does require the discharger to implement salt control Best Practicable Treatment or Control and to potentially submit a Salt Control Plan if the FDS threshold is exceeded.

### **Annual Reporting Requirements and Fees**

Although the State Water Board intended to streamline and improve the WDR permitting process for wineries, stakeholders across the winemaking industry have expressed concern about the cost and complexity of complying with the new General Order.

The General Order provides a model Monitoring and Reporting Program that provides dischargers with alternatives to address site-specific conditions to achieve General Order compliance.<sup>63</sup> The Monitoring and Reporting Program includes cost estimates for compliance that provide a general range of costs, whereas actual costs will depend on many factors. According to the Water Board's estimate, the one-time monitoring costs will be approximately:

- for Tier 1 winery - \$500 to purchase a flow meter, with no on-going monitoring costs
- for Tiers 2 to 4 - \$500 to \$750 to purchasing a pH and electrical conductivity meter

The Water Board's estimate of the effort to develop required technical reports is estimated to range from 40 hours of in-house staff time to 100 hours of in-house and/or consultant time, depending on the winery size and complexity and the needs of the specific technical report.

The Water Board's estimate for annual ongoing monitoring costs by Tier are:

- Tier 1: no on-going monitoring
- Tier 2 (assuming 61 days of discharge) - \$1,500 to \$5,000

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<sup>63</sup> State Water Board, General Waste Discharge Requirements For Winery Process Water (Order WQ 2021-0002-DWQ), January 20, 2021, Attachment G: Monitoring and Reporting Program

- Tier 3 (assuming 75 days of discharge) - \$3,000 to \$10,000
- Tier 4 (assuming 100 days of discharge) - \$25,000 to \$45,000

These estimated ongoing annual monitoring costs do not include labor costs for in-house staff or consultants. They also do not include costs to a winery for possible engineering, design, permitting or construction work that may be necessary for General Order compliance, or the technical reports potentially required if certain General Order activities or requirements are triggered because the specific work necessary at individual wineries. These costs will vary significantly, and the Water Board found it is not feasible to summarize such costs and factors of the General Order. The General Order does address facility-specific compliance costs by providing dischargers with alternatives to demonstrate compliance by meeting specific design or performance standards, a compliance schedule to complete necessary upgrades at existing wineries, and compliance options for addressing specific General Order exceedances.<sup>64</sup>

#### Wine Institute Estimates of Costs

The Wine Institute (an advocacy group for the California wine industry) commissioned a study to calculate the ongoing monitoring cost of compliance with the General Order, beyond the startup cost and capital expenses estimated by the Water Board. They found the annual monitoring costs for a typical Tier 2 winery (with 6-7 winery employees dedicated to the production of wine), could cost between \$21,000 and \$35,000 in additional annual wages. They also suggest that there are additional unknown costs necessary to upgrade systems to meet other standards proposed in the Winery Order, and they anticipate that many wineries will need to engage an expert consultant to assist with compliance. The estimated costs of these consulting services range from \$20,000 to \$40,000 per year. They estimate the annual costs of testing and monitoring a Tier 2 winery could be as much as \$52,000 to \$91,000, and that these costs would be even greater for Tier 3 and 4 wineries.<sup>65</sup>

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<sup>64</sup> State Water Board, General Waste Discharge Requirements For Winery Process Water, Attachment G: Monitoring and Reporting Program, Estimated Monitoring and Reporting Program Cost Ranges, page G-30

<sup>65</sup> Wine Institute, et.al., *Letter to California State Water Resources Control Board, RE: General Waste Discharge Requirements for Winery Process Water*, August 5, 2020

## Chapter 5 - Livermore Valley Water and Groundwater Quality Issues

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The Livermore Valley Groundwater Basin is an inland alluvial groundwater basin underlying the east-west trending Livermore-Amador Valley and Livermore Uplands in eastern Alameda County. The groundwater basin is divided into four basin areas: the Main Basin; Fringe Basin North; Fringe Basin Northeast and Fringe Basin East. The Main Basin is further divided into an upper and lower aquifer. The Main Basin is a portion of the regional groundwater basin that contains the highest yielding aquifers and generally the best quality groundwater and is an important source of drinking water for the communities that overly it. The Fringe Basins contain water with slightly higher salinity, and generally yield low quantities of water to wells. The Upland Aquifer is of lower productivity and quality than the aquifers of the Main Basin, and groundwater production is limited to domestic and agricultural uses in these areas.

### 5.1 - Nitrates

#### 2015 Nutrient Management Plan (NMP)

The Zone 7 Water Agency monitors groundwater quality throughout the Basin. In 2015, Zone 7 published a Nutrient Management Plan (NMP) to assess existing and future groundwater nutrient concentrations relative to planned expansion of recycled water projects and future development in the Livermore Valley.<sup>66</sup> The 2015 NMP concluded that in general, groundwater quality throughout most of the Main Basin is suitable for most types of urban and agriculture uses, with some minor localized water quality degradation. The primary nutrient constituent of concern identified in the NMP is nitrate, which is the only nutrient to have had a significant impact on groundwater quality. The Basin objective for nitrate was 45 mg/L (measured as NO<sub>3</sub>) for both the Main and Fringe Basins. As reported in the 2015 NMP, the Main Basin and each of the Fringe Basins all had average basin concentrations of NO<sub>3</sub> that were well below the 45 mg/L Basin objective. However, there were ten identified Areas of Concern (or “hot spots”) where local nitrate concentrations exceeded the Basin objective.<sup>67</sup> Nitrate contamination in groundwater supplies is typically the result of nitrogen-containing compounds being leached from the surface and mixing with ambient groundwater. Sources of nitrogen loading include fertilizers, decaying vegetation and other organic materials, animal manure waste, nitrogen-fixing crops, and sewage and other wastewaters disposed of on-site (including winery process water).

The ten “hot spots” identified in the 2015 NMP are believed to primarily be vestiges of past agricultural land uses and processes, and former municipal wastewater and sludge disposal practices. However, five of the “hot spot” areas are outside of the Urban Growth Boundary, where on-site wastewater treatment systems are the predominant method for sewage disposal. These “hot spot” areas included Buena Vista, Greenville and Mines Road in the Livermore Valley – areas with substantial concentrations of Livermore Valley’s wineries.

- The nitrate plume at Buena Vista is in an area that is primarily not served by municipal sewers, with low-to medium-density residential, vineyard and winery land uses. The potential sources of the nitrate are existing on-site wastewater treatment systems and historical agricultural practices, livestock manure and

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<sup>66</sup> Zone 7 Water Agency, *Nutrient Management Plan (NMP) for the Livermore Valley Groundwater Basin* (California Department of Water Resources [DWR] Basin No. 2-10), July 2015

<sup>67</sup> A separate Salt Management Plan (SMP) for the Livermore Valley Groundwater Basin was developed and issued by Zone 7 Water Agency in 2004 and incorporated into Zone 7’s Groundwater Management Plan (GWMP) for the Basin in 2005. Percolating water from on-site wastewater treatment system (OWTS) was found to contribute a small amount to the overall salt additions to the groundwater basin, but it was not identified as a significant source. Therefore, no specific limitations or control measures were recommended for management of salt additions from on-site wastewater treatment system.

composting vegetation. There were over 100 on-site wastewater treatment systems in use near the plume, as well as numerous wineries in the area.

- The nitrate plume at Greenville is also in an area that is not served by a municipal sewer and is developed as low-density residential, vineyard and wineries. The source of nitrate is unconfirmed but may be from historical chicken farming and other agricultural land uses located up gradient of the monitoring well. There is concern for the potential increase in on-site wastewater treatment system disposal from future commercial development planned for this area.
- The nitrate plume indicated at Mines Road was represented by monitoring of a single well. Nitrate concentrations in this well have historically fluctuated widely, ranging from non-detect to a maximum of nearly 95 mg/L (measured as NO<sub>3</sub>) in October 2011. The reason for the fluctuations is unknown but may be related to agriculture and changes in precipitation. This area is not served by a municipal sewer. It is primarily an agricultural, open space and low-density residential area.

Although the 2015 Nutrient Management Plan did not predict overall Basin groundwater quality to degrade significantly due to ongoing and anticipated future nutrient loading, the NMP does identify the need to further assess, reduce or manage, and monitor nutrient loading to make sure that no new high nitrate “hot spot” areas are created. Zone 7’s short-term goals expressed in the 2015 NMP were to improve their understanding of current and historical nutrient impacts to the groundwater basin, and to minimize current and future nutrient loading while allowing for a reasonable amount of new loading from rural development and increased recycled water use. The long-term goal was to meet Basin objectives in all parts of the groundwater basin. The strategies for achieving these goals included:

- promoting the continued use of best management practice (BMP) requirements aimed at minimizing nutrient loading from certain land uses (i.e., irrigated and fertilized turf and landscapes, confined livestock operations, vineyards and wineries)
- implementing loading limits for on-site wastewater treatment systems located within the identified “hot spot” Areas of Concern
- implementing an “On-site Wastewater Treatment System (OWTS) Special Permit Area” designation where advanced on-site wastewater treatment systems with nitrogen reduction treatment methods are required, and
- because wastewater generated by commercial operations can result in higher loading rates than residential flows, the permitting of on-site wastewater treatment systems for new commercial projects within the special permit requirement areas require a higher level of scrutiny, and commercial projects (i.e., wineries) must include a nitrogen-removing system, and also must demonstrate by analysis that the project will result in an improved nitrate condition beneath the site and not cause the offsite condition to worsen.
- Many of the commercial user’s on-site wastewater treatment systems will fall under the Water Board’s jurisdiction, and thus be subject to their Report of Waste Discharge (ROWD) requirements.

## **2021 Alternative Groundwater Sustainability Plan Update**

In 2021, Zone 7 prepared an Alternative Groundwater Sustainability Plan Update for the Livermore Valley Groundwater Basin.<sup>68</sup> This 2021 Sustainability Plan Update included new data about on-site wastewater treatment systems obtained from the Alameda County Department of Environmental Health, and used a different threshold defined as a Maximum Contaminant Level of 10 mg/l (measures as nitrate, or N), based

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<sup>68</sup> Zone 7 Water Agency, *Alternative Groundwater Sustainability Plan 2021 Update for the Livermore Valley Groundwater Basin*, December 2021



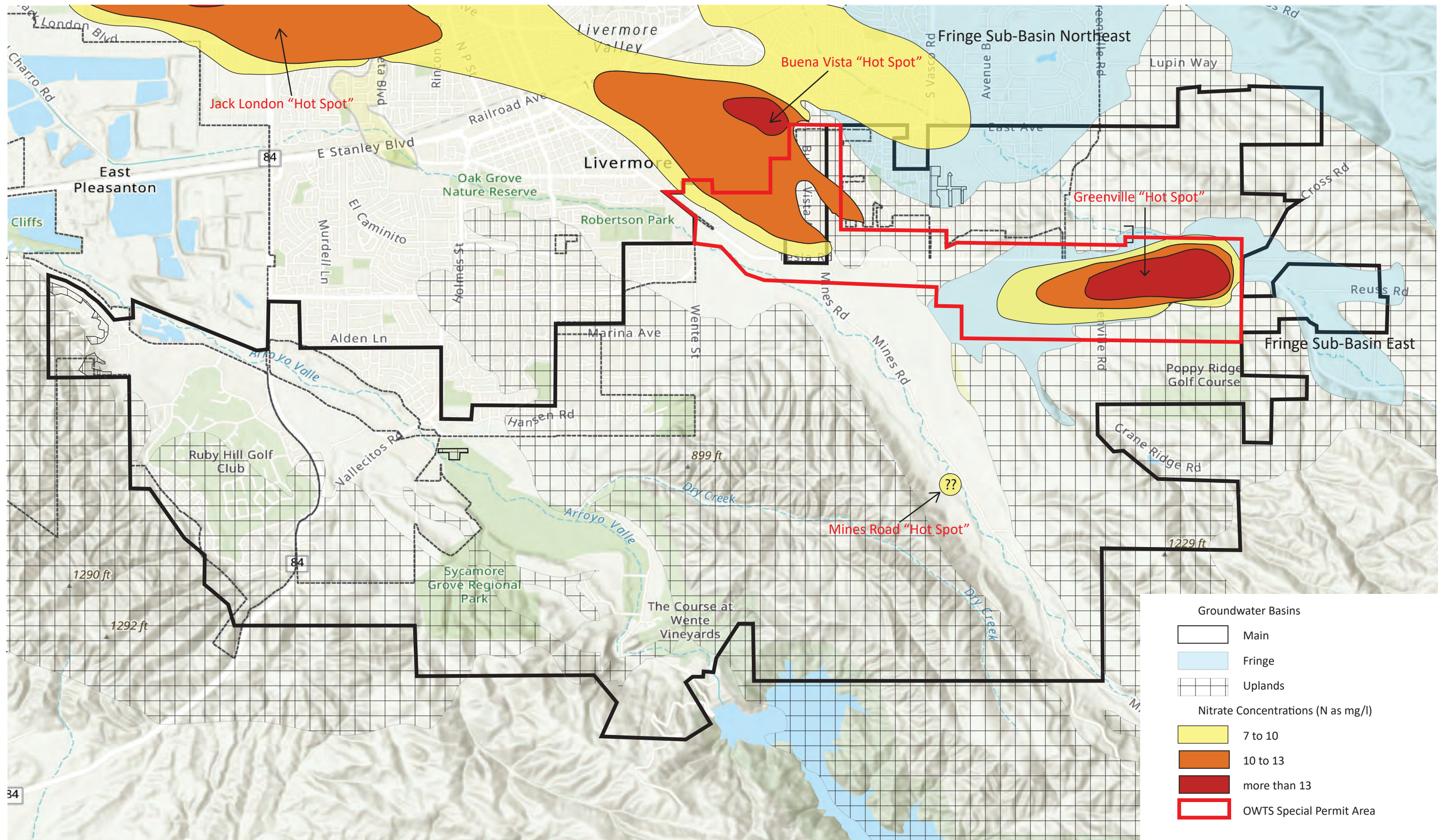
on the federal and State Primary Maximum Contaminant Level for drinking water. Based on year 2020 data, the total average nitrate (as N) concentration in both the Upper and Lower Aquifers of the Main Basin is 3.2 mg/L. In each of the Fringe Sub-Basins, average concentrations range from 2.9 to 8.3 mg/L. All average concentrations are below the Maximum Contaminant Level (MCL); however, certain localized areas remain as “Nitrate Areas of Concern”, where nitrate concentrations still exceed the MCL (see **Figure 8**).

To minimize nitrate loading to the Basin, the 2015 NMP recommended implementing on-site wastewater treatment system loading limits in areas of concern, as well as an OWTS Special Permit Area where advanced treatment and additional monitoring was required. Based on these 2015 NMP measures, the size of most areas of concern have decreased in extent, indicating an improved condition. Prior to implementing the 2015 NMP measures, the Buena Vista area of concern appeared to have been increasing slightly and migrating downgradient towards the Cal Water municipal wells, and nitrate concentrations in the Greenville area of concern were increasing over time, suggesting that the plume was either increasing or migrating downgradient. Since 2015 and the establishment of nitrate loading limits and establishment of the OWTS Special Permit Area, 2021 data shows that these recommendations have reduced nitrogen loading by about 70 pounds of nitrogen per year, primarily in the Buena Vista and Greenville Special Permit Areas.

The 2021 Sustainability Plan Update also included an estimate of future annual nitrogen loading. Annual nitrogen loading from each known source was estimated and summed up to predict future nitrate trends. The model results predict that average nitrate concentrations will decrease over time in the Main Basin but will increase in the Fringe and Upland Areas. The 2021 Sustainability Plan Update concluded that the on-site wastewater treatment system loading limits and the OWTS Special Permit Areas, together with coordination with Alameda County Environmental Health on its management program for on-site wastewater treatment systems, are addressing the nitrate loading concerns in the area, and support Zone 7’s continued sustainable management of the Basin’s groundwater quality on a regional basis, while protecting groundwater quality for beneficial uses.

The State Water Board’s General Order for statewide wineries provides that local agencies may apply to the State Water Board or Regional Water Board for oversight of wineries located within the local agency’s jurisdiction. Some Regional Water Boards work with County Environmental Health Programs and may authorize local agencies to oversee winery process water activities. The Alameda County Department of Environmental Health is already engaged in oversight of many of the regulatory and monitoring provisions of the General Order through its existing OWTS Special Permit Area process, which could potentially provide local agency oversight of the General Order.





**Figure 8**  
Nitrate Concentrations (mg/L) in the Upper Aquifer, 2020 Water Year

*Source:* Zone 7 Water Agency, *Alternative Groundwater Sustainability Plan for the Livermore Valley Groundwater Basin*, 2020, Figure 8-22



## 5.2 - Salinity

Irrigation practices tends to concentrate salts and minerals as part of the evapotranspiration processes. Historic and current irrigation of agriculture and urban development over the Main Basin has resulted in higher salinity leachate and percolate recharge into the groundwater, which has elevated the Main Basin's groundwater concentrations of total dissolved solids (TDS). Historic, and to a lesser degree current wastewater disposal practices contribute to an increase of groundwater salinity in the Main Basin. More recently, the use of treated recycled water, which provides an important source of water supply, has elevated concerns about salt loading of the Main Basin. Generally, recycled water contains two to three times the concentration of salts (represented as TDS) as typical treated water.<sup>69</sup>

### Zone 7 Salt Management Plan

In 2004, the Zone 7 Water Agency adopted a Salt Management Plan (SMP) to address the increase in total dissolved solids (TDS) that were observed in portions of the Main Basin. Over time, implementation of the SMP has included modifications to existing conjunctive use programs, salt removal by groundwater pumping, artificially recharging lower salinity imported water, and development of the Mocho Groundwater Demineralization Plant (MGDP). The MGDP began operation in 2009, and is a reverse osmosis treatment system that produces demineralized water (water with extremely low TDS). The demineralized water is then blended with the groundwater to desired TDS levels, while the brine concentrate from the reverse osmosis process is exported out of the watershed to San Francisco Bay.

According to Zone 7's Annual Report for the 2020 water year,<sup>70</sup> Zone 7 found that there has been a continued general upward trend in TDS concentrations in the Main Basin over the last 40 years, but TDS concentrations within the South Livermore Valley have stayed relatively low, especially during times of significant stream recharge. During the 2020 water year, TDS concentrations in groundwater were lowest in the areas adjacent to the Arroyo Valle and the Arroyo Mocho, where they were generally less than the applicable minimum threshold levels established under the Salt Management Plan. Higher TDS concentrations tend to be in areas within Pleasanton and northeast of Livermore.

## 5.3 - Biochemical Oxygen Demand

Biochemical oxygen demand (BOD) is the measure of oxygen consumed by bacteria and other microorganisms during the process of decomposition of organic matter by aerobic bacteria. A high BOD indicates that more oxygen is required for decomposition and signifies lower water quality, while a low BOD means less oxygen is being removed from the water during composition, so the water is usually more pure. Oxygen consumed in the decomposition process also robs other aquatic organisms of the oxygen they need to live.

BOD content is an important factor for on-site wastewater treatment systems (or septic systems). Septic tanks operate as an anaerobic (without oxygen) process, so much of the BOD present in sewage (and in winery process water) flows to the leach field. The organic matter in the sewage supports the growth of microbes under the leach field in the absorption field (or biomat). These microbes within the absorption field remove bacteria and viruses from the sewage so that they do not pass to the groundwater, and they digest most of the remaining BOD. Under proper site and operating conditions, septic systems remove more than 95 percent of a waste stream's BOD, and the absorption field operates in equilibrium (as many cells are

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<sup>69</sup> Zone 7 Water Agency, *Salt Management Plan*, May 2004

<sup>70</sup> Zone 7 Water Agency, *Sustainable Groundwater Management Program's Annual Report for the 2020 Water Year*, March 2021, page 7-4



growing as are being decomposed). If organic matter is added to a septic system faster than it can be decomposed in the absorption field, the absorption field thickens and reduces the wastewater infiltration rate. This typically leads to a system-wide reduction in the hydraulic loading rate (the rate at which wastewater enters a septic system), and/or septic tank effluent begins to back up in the soil absorption trenches, or breaks out on the ground surface.

BOD is also traditionally used to measure of the strength of effluent that is released from conventional sewage treatment plants to surface waters or streams. Sewage that has a high BOD can deplete oxygen in receiving waters, causing fish kills and other changes to the surface water ecosystem. The City of Livermore owns and operates the City of Livermore Water Reclamation Plant, which provides secondary treatment of wastewater collected from its service area. This treated wastewater is combined with treated effluent from other public wastewater treatment systems, and eventually discharged into the San Francisco Bay. To control pollutants that are discharged into the surface waters of the Bay, the City of Livermore Water Reclamation Plant's NPDES Permit includes water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria. The criteria pursuant to this permit for the discharge of Biochemical Oxygen Demand (BOD) is 45 mg/l on a monthly average, and 30 mg/l on a weekly average.<sup>71</sup>

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<sup>71</sup> California Regional Water Quality Control Board San Francisco Bay Region (RWQCB), , NPDES Permit CA0038008, September 1, 2022

## 6- South Livermore Sewer Expansion Project

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### 6.1 - South Livermore Sewer Expansion Project Objectives

In May of 2022, the City of Livermore issued a Draft Supplemental EIR for a proposed South Livermore Sewer Expansion Project.<sup>72</sup> As background to the Sewer Expansion Project, the City of Livermore indicated that,

*“Because connection to urban services such as sanitary sewers is limited by the City’s Urban Growth Boundary, many residential and commercial uses in South Livermore Valley rely on on-site wastewater treatment systems. In South Livermore Valley, the Regional Water Quality Control Board, County Department of Environmental Health, and Zone 7 Water Agency have restricted issuing permits for new septic systems or replacing failing septic systems. These Agencies’ positions reflect their mission to protect the Tri-Valley’s groundwater basin. The Agencies have identified high nitrate concentrations in groundwater throughout the Tri-Valley resulting from past livestock operations and failing, undersized or inefficient septic systems. These issues have the potential to adversely affect water quality and public health, safety and quality of life. The inability to construct, expand or replace septic systems, or to connect to the sanitary sewer, is negatively affecting the South Livermore Valley wine industry and related uses, thus preventing the vision of the Livermore General Plan, SLVAP and SLVSP.”<sup>73</sup>*

To address these concerns, the City proposed implementation of a South Livermore Sewer Expansion Project that would amend the City’s voter-approved policies related to the South Livermore Urban Growth Boundary, to permit the extension of sanitary sewer lines into non-City served areas beyond the City limits. The City’s objectives for the proposed Sewer Expansion Project included the following:

- Improve groundwater quality in the South Livermore Valley area relative to nitrates, which is associated with residential septic systems and livestock keeping
- Facilitate the development potential of existing and new wineries, visitor serving commercial uses, and residences consistent with the City’s General Plan, SLVSP and South Livermore Valley Area Plan (SLVAP) subject to Alameda County Measure D, and
- Enhance the short- and long-term economic viability of agriculture and viticulture in the South Livermore Valley area, consistent with goals of the City’s General Plan<sup>74</sup>

### 6.2 – Sewer Expansion Project Description

#### Sewer Line Improvements

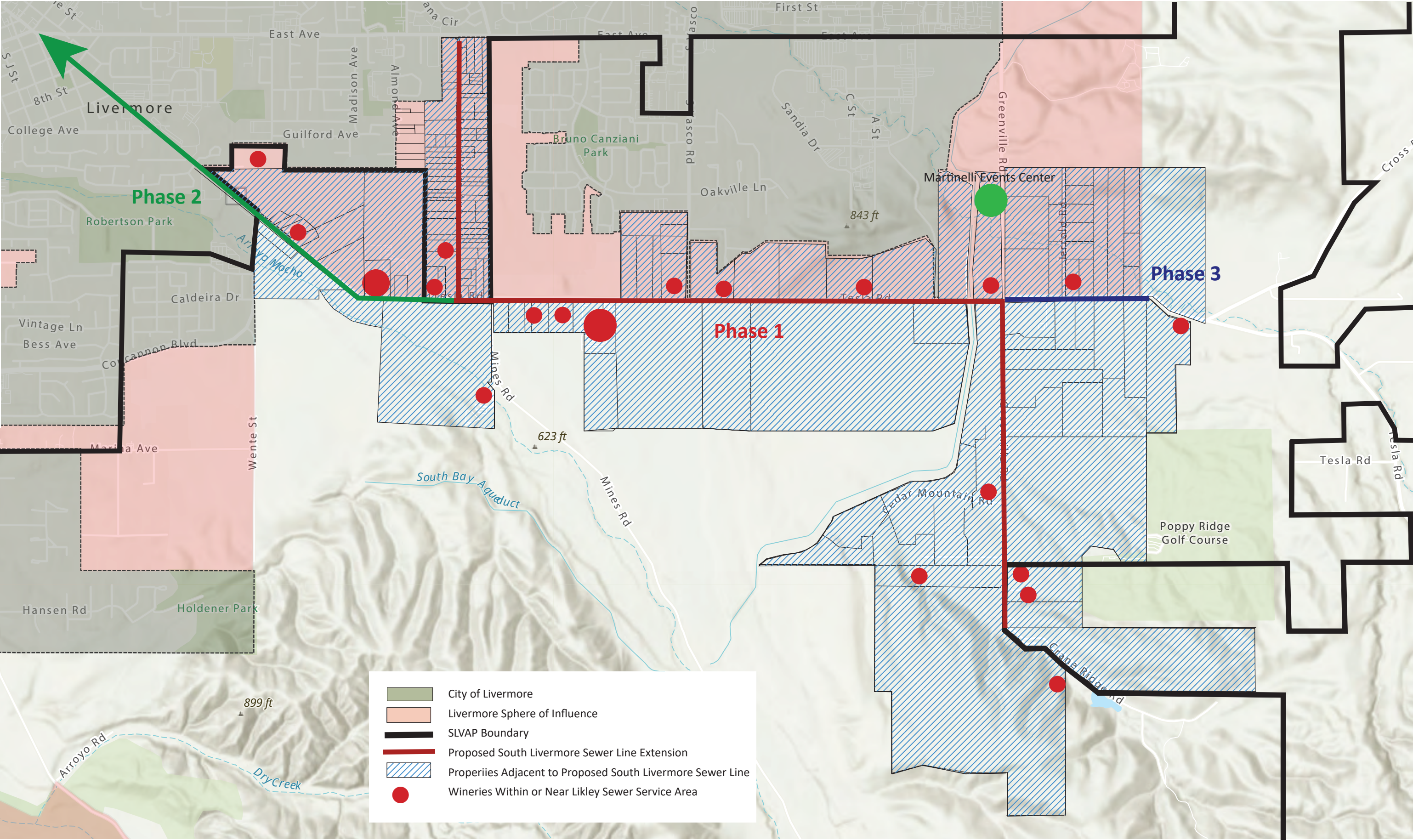
The South Livermore Sewer Expansion Project’s alignment is generally located southeast of the City of Livermore within unincorporated Alameda County, California (see **Figure 9**). A portion of the project alignment is located within the City of Livermore and another portion aligns with the City’s Sphere of Influence boundary.

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<sup>72</sup> Livermore, City of, *Draft Supplemental Environmental Impact Report for the South Livermore Sewer Expansion Project* (State Clearinghouse #2021120386), May 2022

<sup>73</sup> Livermore, City of Draft SEIR, May 2022, page 2-7

<sup>74</sup> Ibid, page 2-7



**Figure 9**  
**South Livermore Sewer Line Expansion Project Alignment**  
**and Adjacent Properties**

**Source:** City of Livermore, South Livermore Sewer Expansion Project Final Supplemental Environmental Impact Report , June 2022



- Phase 1 of the Sewer Expansion alignment would be located along Buena Vista Avenue, southward from the existing sewer line within the East Avenue right-of-way to Tesla Road. From there, it would extend eastward along Tesla Road from Buena Vista Avenue to Greenville Road, and then south down Greenville Road from Tesla Road to approximately 5,900 feet south of Tesla Road. The portion along Buena Vista Avenue is within the City's Sphere of Influence, and adjacent to the City boundary and UGB at East Avenue. The alignment along Tesla Road is adjacent to the City's Sphere of Influence. The alignment along Greenville Road is outside the City's Sphere of Influence.

The project also includes two potential future phases of the sewer alignment:

- The western future phase would be located on Tesla Road, extending westward from Buena Vista Avenue to South Livermore Avenue, then up South Livermore Avenue to an existing sewer main northwest of Concannon Boulevard. The western portion of this alignment along South Livermore Avenue is within the City boundary and UGB.
- The eastern future phase would be an eastward extension located on Tesla Road, from Greenville Road to approximately 3,000 feet east of Greenville Road. This extension along Greenville Road is outside the City's Sphere of Influence.

An additional component of the Sewer Expansion Project involves improvements to the existing sewer line in the City limits to alleviate existing "bottlenecks" in the sewer line in segments along East Avenue. The Bottleneck Project would be completed as part of Phase 1. The Project alignment (all phases) is located within existing paved rights-of-way.

### **Treatment Plant Capacity**

According to the City of Livermore's South Livermore Sewer Expansion Project EIR, untreated winery process water during the crush and bottling season have a biochemical oxygen demand (BOD) that is 14 to 28 times higher than typical residential sewage. Based on the 2012 WRP Plant Master Plan, the primary clarifiers and aeration tanks at the Livermore Water Reclamation Plant (LWRP) could handle approximately 14,000 gallons per day of untreated winery process water, beyond currently projected General Plan buildout flows. The preliminary analysis provided in the Sewer Expansion Project EIR estimates that sewer flows from South Livermore Valley wineries along the proposed sewer expansion alignment could be approximately 33,715 gallons per day (HydroScience 2022). Therefore, untreated organic flows from wineries could overload the treatment processes at the LWRP. Therefore, pre-treatment of the organic flows from wineries that apply for a sewer connection to the proposed system may be required to prevent overloading the treatment processes at the LWRP.

The impacts of organics (BOD) in winery process water on the treatment processes at the LWRP would need to be further studied to determine whether, and what level of pre-treatment by individual users, would be required. Additionally, the City would need to determine the types and thresholds of any necessary future LWRP improvements needed to support citywide wastewater treatment needs.<sup>75</sup>

### **6.3 – City of Livermore's Actions on the Sewer Expansion Project**

In June of 2022, the City of Livermore published a Final EIR for the South Livermore Sewer Expansion Project, and in July of 2022 the Livermore City Council voted unanimously to adopt a resolution certifying the EIR and to approve ballot initiative language to extend sanitary sewer service beyond the Urban Growth Boundary. The ballot measure was necessary because the City of Livermore voters approved the original South Livermore Urban Growth Boundary policies in 2000, and changes to those policies must be approved by the

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<sup>75</sup> Livermore, City of, *South Livermore Sewer Expansion Project Draft SEIR*, May 2022, page 4.2-17



voters. The measure (Measure P) was placed on the November 2022 ballot by the Livermore City Council and at the request of Tri-Valley Conservancy.

### Intended Users and Anticipated Benefits of the Sewer Expansion Project

The Livermore City Attorney prepared an impartial analysis of Measure P, which was included as part of the ballot measure information.

- The Livermore City Attorney found that Measure P allows the City to provide sewage treatment and disposal services for residences on property outside the South Livermore Urban Growth Boundary, subject to conditions that disallow further division of the property and disallow the provision of urban services to non-residential uses on the property. To receive sewer service, the measure requires the property to be designated for residential uses by the Livermore General Plan, Alameda County's SLVAP, or the City's SLVSP on the date the measure is passed. The uses must also conform to Alameda County Measure D.
- The Livermore City Attorney also found that Measure P allows the City to provide sewage treatment and disposal services for commercial uses on property outside the South Livermore Urban Growth Boundary that are designated for agricultural uses with associated allowable commercial uses, subject to conditions. For parcels that existed on October 27, 1997, the measure adds new conditions that define the conservation easement that must be recorded. For all other parcels designated for agricultural uses with associated allowable commercial uses, the measure imposes similar conditions, but does not require the parcels to be adjacent to the South Livermore Urban Growth Boundary. The measure provides that if Alameda County permits 180,000 square feet or more of commercial use, the City of Livermore is no longer permitted to provide new sewage treatment and disposal service for commercial uses.<sup>76</sup>

Measure P only allows sewer service to be extended for commercial and residential uses that are permitted by Alameda County's SLVAP and allowed by Alameda County's Measure D, as those County policies exist now, or as they may be amended in the future. Measure P will not change the location of the South Livermore Urban Growth Boundary, does not amend Alameda County's SLVAP, and does not amend Alameda County's Measure D.

### Support for Measure P

In its Fact Sheet: *Relationship of Groundwater Management to Measure P*, Zone 7 indicated its interest in Measure P based on its role as the Groundwater Sustainability Agency responsible for ensuring the continued sustainable management of the underlying groundwater basin.<sup>77</sup> The Zone7 Fact Sheet noted that, "historic agricultural practices in this portion of Alameda County has resulted in the use of on-site wastewater treatment systems as a means of disposing of wastewater, which has caused the accumulation of nitrates in groundwater. In some locations, nitrates have accumulated in groundwater to levels above what is considered safe for drinking water consumption. The South Livermore Sewer Extension project would serve several commercial parcels along Tesla Road and the Buena Vista residential neighborhood, and both areas have been identified as having nitrate contamination in groundwater (see prior **Figure 8**). The proposed sewer connections are intended to reduce nitrate discharge into the groundwater basin and prevent further degradation of groundwater quality. Based on Zone 7's analysis, approximately 160 adjacent or nearby parcels either use existing on-site wastewater treatment systems, or they are zoned such that any future use would need an on-site wastewater treatment system. Conversion to a municipal sewer system would remove

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<sup>76</sup> Livermore, City Attorney's Office, Impartial Analysis Measure to Amend the South Livermore Urban Growth Boundary, August 2022

<sup>77</sup> Zone 7 Water Agency, *Relationship of Groundwater Management to Measure P "Fact Sheet"*, October 2022

the input of nitrogen and nitrate contamination contributed from OWTS systems in the area. With the removal of a constant source, nitrate will naturally break down in groundwater and water quality will improve over an extended time without further treatment.”

In addition to Zone 7’s technical support, Measure P was also supported by the Tri-Valley Conservancy, Friends of Livermore, Friends of Open Space and Vineyards, the Greenbelt Alliance, the Livermore Valley Chamber of Commerce, the Innovation Tri-Valley Leadership Group, the East Bay Times, and the Independent. In the November 2022 election, Measure P was passed by the voters of the City of Livermore, receiving more than 66% approval.

## 6.4 –Funding and LAFCO Changes of Organization

### Costs and Potential Funding Sources

In 2021, the City of Livermore retained HydroScience Engineers, Inc. to conduct preliminary design engineering and analysis of an extension of the City sewer system. HydroScience also developed a planning-level cost estimate for the new infrastructure and identified potential downstream capacity deficiencies related to the sewer line extension.<sup>78</sup> According to the planning level cost estimates of the HydroScience report, the total infrastructure costs (including hard costs, engineering design and consulting services, permitting and right of way, construction management and inspection, and a 30% contingency) is estimated at approximately \$12,120,000. These costs are divided across each of the Project’s phases, as indicated in **Table 9**.

**Table 9: Planning-Level Cost Estimates for South Livermore Valley Sewer Extension**

<u>Construction Phase</u>	<u>Cost Estimate</u>
Phase I	
Buena Vista Avenue	\$2,070,000
Tesla Road, Buena Vista to Vasco	\$1,820,000
Tesla Road, Vasco to Greenville	\$2,630,000
Greenville, South of Tesla	<u>\$2,150,000</u>
<b>Subtotal:</b>	<b>\$8,670,000</b>
Phase II – South Livermore Avenue to south of Concannon	\$1,960,000
Phase III – Tesla Road, east of Greenville	\$1,460,000
“Bottleneck” Improvements at East Avenue	<u>\$30,000</u>
<b>Total:</b>	<b>\$12,120,000</b>

Source: HydroScience Engineers, Inc., January 31, 2022, Attachment D

These preliminary costs were clearly identified as “planning level” estimates. Final cost estimating based on more refined engineering design has not yet been conducted. Funding sources needed to cover the full costs of the sewer extension project have also not been fully identified. It is expected that a large share of the costs (approximately \$6.5 million) will be funded via a grant from the Alameda County Board of Supervisors, which

<sup>78</sup> HydroScience Engineers, Inc., *Sewer System Extension Hydraulic Analysis*, January 31, 2022

has already been earmarked for this project. Other funding sources will likely include some contribution from the City of Livermore. The rest is expected to come from federal and state infrastructure funds (e.g., Infrastructure for Rebuilding America grants), other federal appropriations, and groundwater management grants.

Properties that connect to the extended sewer line will be expected to pay City of Livermore sewer connection fees and on-going sewer service fees (like all Livermore residents and businesses) to address their portion of operations and maintenance costs of the sewer system.

A potential additional cost associated with the South Livermore Sewer Line project is the potential need to further address BOD levels of winery process water, with potential additional cost for treatment processes either at individual wineries as pre-treatment, or at the WRP.<sup>79</sup>

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<sup>79</sup> Livermore, South Livermore Sewer Expansion Project Final Supplemental Environmental Impact Report (State Clearinghouse Number 2021120386), June 2022, page 4.2-17

## Chapter 7 – Alameda LAFCO Consideration Related to South Livermore Valley

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As described in the prior chapter of this Study, Livermore voters approved Measure P in November of 2022, which included changes to City General Plan policy to enable the extension of sewer service beyond the City's Urban Growth Boundary into the unincorporated South Livermore Valley. However, Alameda LAFCO is charged with the responsibility of identifying the most logical service providers for municipal services (including but not limited to wastewater) throughout Alameda County. Implementation of the City of Livermore's plans for this sewer extension are subject to LAFCO's approval as a "change of organization", either via annexation and/or through an out-of-area service agreement (or contract).

- Under an annexation scenario, the City may request Alameda LAFCO's approval for annexation of the "affected territory". This would allow the City to complete its proposed project without building in two different jurisdictions. In this case the affected territory includes certain lands already within the City of Livermore, lands that are outside of the City limits and Urban Growth Boundary but within Livermore's Sphere of Influence, and lands that are non-contiguous to the City's boundaries or its Sphere.
- Alternatively, the City may request Alameda LAFCO's approval for an Out-of-Area Service Agreement that would allow the City to provide wastewater services to the affected territory without amending its City limits.

At the time of preparation of this Special Study, the City of Livermore has not yet initiated any requests for LAFCO consideration of either an annexation or out-of-area contract. However, in anticipation of Livermore's likely request, the following information is provided for the LAFCO Board's consideration relative to issues of LAFCO purview when considering annexations and/or out of area contracts and the extension of municipal services.

### 7.1 – Information Relevant to LAFCO Concerns

#### Environmental Concerns

The Zone 7 Water Agency's 2015 Nutrient Management Plan concluded groundwater quality throughout most of the Main Basin is suitable for most types of urban and agriculture uses, with some minor localized water quality degradation, but also found ten identified Areas of Concern (or 'hot spots') where local nitrate concentrations exceeded the Basin Objective. Five of the "hot spot" areas are outside of the Urban Growth Boundary, where onsite wastewater treatment systems are the predominant method for sewage disposal. In its 2021 Alternative Groundwater Sustainability Plan Update, Zone 7 found that certain localized areas remain as "Nitrate Areas of Concern", where nitrate concentrations exceed the maximum contaminant levels. To minimize nitrate loading to the groundwater, Zone 7 and Alameda County Health Department have implemented a Special Permit Area, where advanced treatment and additional monitoring is required. This Special Permit Area generally corresponds to the area proposed to be served by the Livermore Sewer Extension Project.

Additionally, the State Water Board has determined that winemaking generates process water that has the potential to degrade groundwater quality depending on winery-specific activities, size and treatment processes. The primary concerns for winery process water that effects groundwater quality are nitrogen, salinity, and biochemical oxygen demand. The State Water Board's *General Order* found that statewide, the typical on-site methods for treating, reusing and/or disposal of winery process water statewide have the potential to introduce constituents that may degrade groundwater quality, and that advanced treatment with on-going monitoring of on-site wastewater systems at wineries is required.

Implementation of the City of Livermore's proposed sewer line extension would enable those residences and agricultural operations that are currently contributing to high nitrate concentrations in the groundwater via



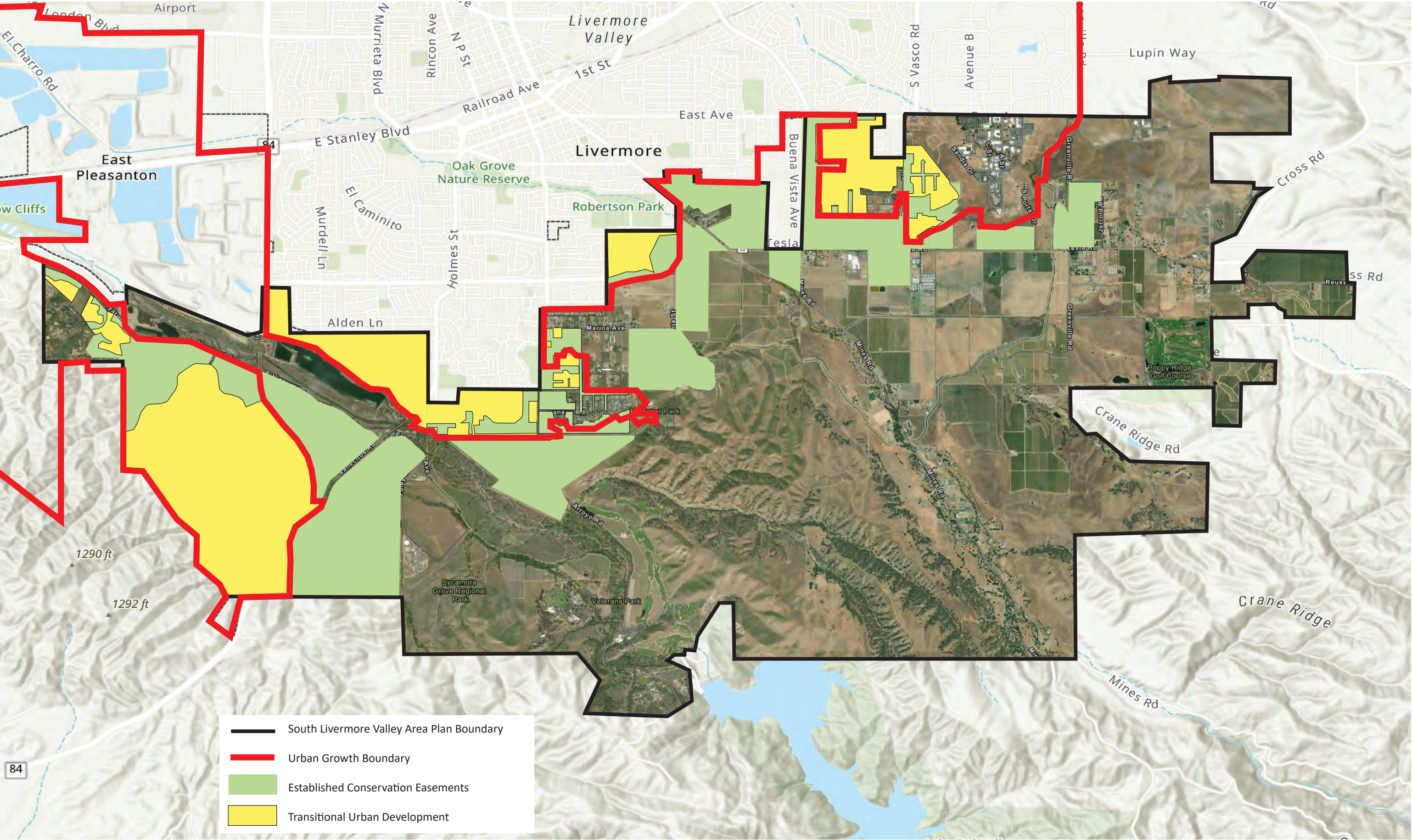
their on-site wastewater treatment systems, particularly at the Buena Vista and Greenville area nitrate plumes, to instead dispose of their wastewater into the municipal wastewater system. This would remove a substantial number of existing on-site wastewater systems and considerably reduce future groundwater contamination in these “hot spot” areas. A separate Zone 7 analysis prepared in response to the City’s proposed sewer line extension found that approximately 160 adjacent or nearby parcels either use existing on-site wastewater treatment systems or they are zoned such that any future use would need such systems. Conversion to a municipal sewer system would remove the input of nitrogen and nitrate contamination contributed from on-site wastewater treatment systems in the area. With the removal of a constant source, nitrate will naturally break down in groundwater and water quality will improve over an extended time without further treatment.

## **Risk of Urbanization**

The language of Measure P, which the Livermore voters approved in 2022 as part of the proposed sewer expansion, allows sewer services to be extended only for those commercial and residential uses permitted by Alameda County’s SLVAP and allowed by Alameda County Measure D, as those County policies exist now, or as they may be amended in the future. Measure P did not change the location of the South Livermore Urban Growth Boundary, did not amend Alameda County’s SLVAP, and did not amend Alameda County Measure D. Further, Measure P only allows the City to provide sewage treatment and disposal services for commercial uses on those properties located outside the Livermore Urban Growth Boundary that are designated for agricultural uses with associated allowable commercial uses. For parcels that existed on October 27, 1997, Measure P added new conditions that define conservation easements that must be recorded on those properties if they receive sewer service. For all other parcels designated for agricultural uses with associated allowable commercial uses, Measure P imposes similar conditions, but does not require the parcels to be adjacent to the Livermore Urban Growth Boundary. The measure also provides that if Alameda County permits 180,000 square feet or more of commercial use in the Livermore Valley, the City of Livermore is no longer permitted to provide new sewage treatment and disposal service for those additional commercial uses.

In addition to these policies and legal limits to future urbanization, there are practical on-the-ground limitations to incremental urbanization into the area south of the Measure D/Livermore Urban Growth Boundary. Livermore’s SLVSP Subareas are now substantially built-out (with the exceptions of several commercial sites where wineries and/or wine country visitor-serving uses are permitted), the annexations of lands on the north side of the UGB have already been achieved, and the Tri-Valley Conservancy holds conservation easements on most agricultural lands immediately south of the Urban Growth Boundary (see **Figure 10**). The extension of service into the unincorporated agricultural lands south of the UGB already include appropriate measures to ensure the preservation and conservation of open space and prime agricultural lands, even within those areas to be served by new sewer service.





**Figure 10**  
**Transitional Urban / Agricultural Edge of South Livermore Valley**

Source: Alameda LAFCO Base Map with 2023 Google Earth aerial photography; Tri Valley Conservancy, 2019 (Easements); Livermore SLVSP, 1997



## Cost-Efficient Delivery of Wastewater Services

### Public Funding

As of this Special Study, a budget for Livermore's sewer extension project has not been finalized. A preliminary estimate prepared at the time Measure P was placed on the ballot indicated an estimated cost of \$11.5 to just over \$12 million dollars. More current, but still preliminary estimates indicate that actual costs for this same project may be much higher. It is anticipated that the costs for engineering design and construction will be borne by a variety of public funding sources. Alameda County has conditionally committed up to \$6.5 million toward this project, which (based on original costs estimates) is enough to fund the first phase of this sewer extension on Buena Vista Avenue and Tesla Road from Buena Vista to Greenville. Additionally, Congressman Swalwell has introduced a funding request to the US Appropriations Committee for \$3 million,<sup>80</sup> and other funding sources will likely include additional contribution from the City of Livermore, State funds and other federal monies (e.g., Infrastructure for Rebuilding America Grants). Funding for the sewer line extension into the South Livermore Valley is not expected to rely on private funds from those who receive new sewer service.

Alameda County does not provide sewer services, and the provisions of Measure D prohibit the County from providing sewer services to those properties outside the UGB. No other sewer service provider is available or capable of providing these services. Other than advanced on-site wastewater treatment systems with on-going monitoring, there are no other providers of wastewater disposal services.

### Private Costs

For those residential property owners who choose to obtain new City of Livermore sewer services, they will need to pay a one-time connection charge to the sewer system and will then pay applicable fixed monthly sewer service charges that apply to all Livermore residential properties. These charges fund the cost of operating, maintaining and improving the system.

All non-residential properties (including wineries) will pay the same monthly fixed charge, plus an additional variable rate based on the property type and the amount of wastewater the property generates during the billing cycle. The strength of wastewater, as measured by the amount of organic material and solids that are contributed by non-residential users, also directly impacts the cost of their treatment. Customer types that discharge higher-strength wastewater have higher rates, because their wastewater is more expensive to treat.<sup>81</sup>

## Economic Incentive for Winery Retention, Winery Expansion and New Wineries

Livermore wineries are the primary market for Livermore Valley grapes, and the economic success of Livermore's wineries has a direct correlation with the success of the agriculture/viticulture industry in South Livermore.

As noted in *Realizing the Heritage*, "Wineries are capital intensive businesses. They must provide an adequate physical plant, fermentation tanks and equipment . . . , a temperature-controlled environment for bulk and bottled wines, and tanks and barrels for wine storage and aging. Inventories are often carried for several years prior to sale, which adds further costs and reduces cash flow." *Realizing the Heritage* also finds that, "most of Livermore's wineries are quite small businesses operating on the edge of profitability", quoting one winery owner (who may be representative of many of the small Livermore Valley wineries) as saying,

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<sup>80</sup> Congressman Eric Swalwell, at: <https://swalwell.house.gov/cpf>

<sup>81</sup> City of Livermore, Sewer Service Rates, accessed at: <https://www.livermoreca.gov/departments/administrative-services/finance/utility-billing/wastewater-service-rates>



*“We have generally just broken even. We have professional jobs outside the winery and don’t need to turn this into a profitable business. The winery allows us to make more wine each year than we did as home winemakers. We get to experiment with different varieties and interact with interested consumers. We do it for the fun, not the money.”*

This anecdotal evidence matches well with the reported sales volume of Livermore Valley wine. Although the number of current wineries in the Livermore Valley is now estimated at about 45 wineries, wine production by volume is highly consolidated. Two wineries (Wente and Concannon) have historically produced most of the wine sold from the Livermore Valley, representing more than 80% of all wine sold in 2019. The 10 largest wineries in the Valley produced nearly all the wine sold from the Valley, and the remaining approximately 35 or so small wineries produced less than 10 percent of Livermore Valley wines.

For many of those smaller Livermore wineries that may not be exempt from the County Health Department and new State requirements for advanced treatment and on-going monitoring of on-site wastewater systems, these requirements represent additional costs and management obligations that may be too much for these smaller wineries to absorb. With a fluctuating overall wine sales economy, the lingering effects of the pandemic and the extra burden of actively managing their wineries’ disposal of process water, these new requirements could be a tipping point that discourages many of Livermore’s smaller - “we do it for the fun”- wineries to remain in business. Alternatively, the ability to connect to a municipal sewer system for disposal of their process water may provide enough economic and ease-of-management incentive for these small winery owners to remain in business and continue to contribute to the overall Livermore wine county economy and culture.

The economic and ease-of-management incentive of an available municipal sewer, combined with the new 2022 Measure D regulations that provide for an increase in floor area for agricultural businesses, may also provide enough incentive for those several mid-sized and large wineries in Livermore Valley (i.e., those producing more than several thousand cases of wine per year) to expand their operations. Expansion of existing wineries could increase demand for more Livermore grapes, provide additional visitor-serving amenities and activities, and help increase the volume of direct to consumer sales of Livermore Valley wine.

An additional economic benefit that an available municipal sewer line may provide is the economic incentive needed to attract new wineries, especially new mid- to larger-sized wineries. As noted above, wineries are capital-intensive businesses, and the new State Winery Discharge Order will result in additional capital costs and management costs for winery operations statewide. Those locations where a municipal sewer line is an available option for the disposal of winery process water will become increasingly in demand for those winery businesses seeking to establish new operations. The Livermore sewer line extension may become an economic development opportunity to realize an entirely new market for Livermore grapes, as well as new business operations that are large enough to support national distribution and marketing of Livermore wines to a much broader consumer audience.

### **Achieving the “Critical Mass” of Cultivated Agriculture**

The SLVAP establishes a goal for a “critical mass” of cultivated agriculture, particularly viticulture, of 5,000 acres. Among the goals identified when establishing the Tri-Valley Conservancy were safeguarding the Tri-Valley’s urban growth boundaries and achieving this “critical mass” of cultivated land in the South Livermore Valley. Current estimates show a total of approximately 3,350 acres of cultivated agriculture, primarily as vineyards. Currently, the Livermore Valley is about 1,700 acres short of achieving this “critical mass” goal. To achieve the SLVAP goal, the currently planted acreage needs to be protected, many existing vineyards will need to be replaced/re-planted, and further planting encouraged and supported to ensure the economic viability of the Livermore wine region.

### Land Supply

The South Livermore Valley Area Plan contains a land area of approximately 14,000 acres. According to *Realizing the Heritage*, as much as 5,000 acres are too steep or lack sufficient water for irrigated crop product, and more than 2,200 acres are already established with non-agricultural uses including golf courses, parks, agricultural-based residences and urban uses within the SLVSP Sub-Areas. This leaves a remainder of nearly 7,000 acres within the SLVAP that could potentially be used for cultivated agriculture/vineyards, only about half of which is currently planted. There are adequate land resources within the SLVAP to accommodate the 5,000-acre critical mass of cultivated agriculture established as the goal of the SLVAP.<sup>82</sup>

Most of this potential vineyard area is within the Valley's alluvial plains, although some existing and more potential vineyard lands are found in the Livermore Uplands. Generally, the soil in all these areas is suitable for vineyards. Differences in slope, depth of soil and the water holding capacity of the soil may cause differences in vineyard management.

### Water Supply

Zone 7 of the Alameda County Flood Control and Water Conservation District is the primary water wholesaler for the Livermore Valley. Zone 7's primary water source is imported water from the State Water Project, which makes up approximately 80 percent of Zone 7's water supply. The remainder comes from "banked" groundwater that originated as imported water, and local surface water. In its 2020 Urban Water Management Plan (UWMP), Zone 7 reported that the demand for untreated agricultural water within the District is estimated at approximately 5,800 acre-feet of water, representing approximately 13 percent of the District's total water demand of 44,740 AFY.<sup>83</sup> Nearly all this water comes from the State Water Project. Zone 7 provides imported surface water directly to 82 untreated water customers, largely supplying local agricultural uses. Only an estimated 100 acre-feet of unmetered groundwater pumping is estimated from agricultural wells. As noted in *Realizing the Heritage*, "although landowners can apply for a permit to drill an agricultural well, few have done so because of the potential for boron, extremely low yields from the wells installed in the Livermore formation, and the general availability of surface water."<sup>84</sup>

The UWMP also includes a projection of potable and raw water demands through the year 2045. The projected demand for untreated agricultural water within the District is estimated to increase to approximately 8,300 acre-feet of water by year 2040, representing approximately 15 percent of the District's total estimated 2040 water demand of 55,300 AFY.<sup>85</sup>

However, Zone 7 identifies the future reliability of imported State Water project water as a concern. Drought, sea level rise and natural disasters threaten the Sacramento-San Joaquin Delta, a critical component of the delivery system bringing water to Zone 7. Therefore, Zone 7 is participating in and evaluating various projects that would provide alternate water supplies and/or storage, or protect the existing delivery system against threats. Zone 7's future water supplies are expected to keep pace with water demands through temporary water transfers and long-term projects. In 2045, water supplies are expected to be approximately 49 percent higher than in 2020. With continued strategic planning and implementation of key projects, Zone 7 believes it is well positioned to withstand the effects of a single dry year and a five-year drought. Current water supplies exceed water demands during dry conditions, and this remains true for five-year droughts beginning in 2025, 2030, 2035, 2040, and 2045. Zone 7 expects to be able to meet demands under dry year conditions, with any extra supplies largely going into groundwater storage (or banking) for use during the following years. Still, there is a potential that operational constraints could result in shortages, particularly in the near-term before major water supply projects are implemented. Untreated water customers (i.e., vineyards) would be most

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<sup>82</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 21

<sup>83</sup> Zone 7, 2020 Urban Water Management Plan, June 2021, page 4-2, Table 4-2

<sup>84</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 43

<sup>85</sup> Zone 7, 2020 Urban Water Management Plan, June 2021, page 4-5, Table 4-4

vulnerable because of their reliance on Delta water. Under these conditions, Zone 7 would call for voluntary or mandatory conservation, and make operational adjustments to minimize shortages.

### *Agricultural Water Allocations*

Zone 7 acquired water allocations for domestic and agricultural use from the State Water Project beginning in the early 1960s. By 1997, 6,600 acre-feet of Zone 7's SWP water was allocated to non-potable use, including irrigation. After 1997, the process to acquire SWP allocations changed as Zone 7 sought to increase its water supplies from the SWP by purchasing permanent allocations from other water districts that were not using their full allocations, and Zone 7 allowed agricultural interests to purchase a portion of this increased allocation. By the year 2000, an additional 1,500 acre-feet of SWP allocation was purchased by Zone 7, specifically for Livermore agricultural users, bringing the total untreated agricultural water allocation to 8,100 acre-feet. Based on current agricultural water demands of 5,800 acre-feet and the full SWP allocation of 8,100 acre-feet, there is 2,300 acre-feet of irrigation water from the SWP's full agricultural allocation that is currently "unused", and that could be used to irrigate new vineyards within the Valley. However, use of this "excess" water allocation (all of which has been purchased by individual holders of these allocations) would require the holder of the allocations to sell or transfer a portion of their allocation. It also does not account for dry years, when full allocations are not necessarily available.

As indicated in *Realizing the Heritage*, "a vineyard is a 30-year investment, and relies on water every year. Few landowners will make major investments in establishing a vineyard or an orchard unless they are confident that the investment will be profitable and that the necessary inputs, especially water, will be available for the life of the vineyard or orchard."<sup>86</sup>

### Winegrape Business Outlook

*Realizing the Heritage* includes a detailed analysis of Livermore Valley's wine grape business, and concludes that, "Livermore's vineyard acreage will expand if vineyards are the most profitable use of agricultural land and other scarce resources, including the investment capital of those who wish to be in the winegrape business." Their report also cites other winegrape cost studies that show that "new Livermore Valley vineyards can be profitable and competitive with other coastal California regions, with an increase in demand for Livermore Valley grapes".<sup>87</sup>

If an increase in demand for Livermore grapes is necessary for the profitable expansion of Livermore Valley vineyards, then *Realizing the Heritage* presents three primary strategies for increasing demand, including 1) incremental expansion of local winery demand, 2) expanded efforts to market Livermore grapes to a much broader consumer audience, and 3) perhaps a more quickly realized option of additional grape demand from new mid- to large scale wineries. These strategies are independent and can be pursued in tandem.

- *Incremental Expansion of Local Winery Demand:* Increasing the number of small local wineries in the Livermore Valley can only marginally increase the local demand for Livermore grapes. As reported in *Realizing the Heritage*, the smaller Livermore wineries reportedly purchased 1,729 tons of grapes grown in the Livermore Valley, representing the product of perhaps 346 acres of vineyards, or about 12 percent of Livermore's vineyard acreage. It would require a doubling or more of these small wineries, which are dependent on wine tourism and the direct-to-consumer purchase of wine, to have a major impact on the demand for Livermore grapes. The two largest wineries, Wente Vineyards and Concannon, are largely self-sufficient in grape production. Each of these wineries owns and operates their own vineyards, which provide enough grapes to generally satisfy their own demand. As is, these wineries are unlikely to support a substantial increase in demand for more grapes. However, with the recent changes to Measure

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<sup>86</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 45-46

<sup>87</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 9



D that allow for an increased FAR for agricultural buildings, combined with the availability of a municipal sewer system to help overcome new regulatory obligations, these new conditions may provide enough of an incentive for these wineries to expand their operations, and therefore require additional grapes.

- *Expanded Marketing Efforts:* Currently, grapes from approximately 900 acres of vineyards (representing approximately one-third of Livermore Valley’s total grape production) are exported out of the Livermore Valley at prevailing spot-market prices for coastal grapes. Another way to increase demand for Livermore grapes would be to increase the marketing of Livermore grapes to a broader audience of wineries. With a greater regional or national demand for Livermore grapes, grape prices might become high enough to allow more Livermore vineyards to expect profitability, and therefore invest in expanded acreage. This strategy relies on a large regional or national distribution and marketing channel, which is more likely to be accomplished by larger or mid-sized wineries, or with substantial additional assistance of economic development agencies. The recent formation of a Wine Heritage District provides a 2% assessment on all sales by the local Livermore Valley wineries and provides a first secure funding source for marketing and promotion.
- *Market Differentiation:* The Livermore Valley is an American Viticulture Area (or AVA). An AVA is a delimited grape-growing region with specific geographic or climatic features that distinguish it from the surrounding regions. Increased marketing of the Livermore Valley AVA designation as higher quality of grapes may differentiate Livermore grapes and further incentivize wineries from a broader region to pay more for Livermore grapes for their winemaking. As noted in *Realizing the Heritage*, “almost two-thirds of [Livermore Valley’s] survey-reported bearing acreage is devoted to Cabernet Sauvignon and Chardonnay,” making it “heavily reliant on two varieties that are widely planted throughout California and for which Livermore growers do not receive a price premium.” As recommended in *Realizing the Heritage*, “the need to further differentiate the Livermore Valley AVA from larger regions with similar climates, to attract outside investment in vineyard development, and to build a national reputation for at least one varietal that is well suited to the Livermore climate, should be closely examined.”<sup>88</sup>
- *New Mid- to Large Scale Wineries:* As has been presented in this Study, Wente and Concannon wineries are the dominant and centralized wineries of the Livermore Valley, producing 700,000 and 100,000 cases of wine per year, respectively. The next tier of winery production size in the Livermore Valley drops quickly down to the scale of 10,000 to 25,000 cases per year (e.g., at Ruby Hill, Steven Kent, Darcie Kent, Tenuta Vineyards and Murietta’s Well). Establishment of one or more moderate to large-sized new wineries within the Livermore Valley with production capabilities totaling as much as 100,000 cases of wine (i.e., a new Concannon-sized winery, or four new Steven Kent-sized wineries), could potentially generate a demand for perhaps as much as 500 new acres of vineyards.

As stated in *Realizing the Heritage*, because of Livermore’s small share of California coastal winegrape and wine production, “even a small increase in demand for Livermore grapes is likely to raise Livermore grape prices and vineyard profitability, allowing the Livermore Valley to ‘realize its heritage’ of the 1880s” and achieve the ‘critical mass’ of up to 5,000 acres of planted vineyards and orchards.”<sup>89</sup>

## 7.2 - LAFCO Policies Relative to Changes in Organization, Annexations and Out-of-Area Contracts

California law requires Local Agency Formation Commission (LAFCO) approval prior to any city annexing land or entering into an out of area service agreement with property owners to provide sewer services outside of the City’s boundaries. Alameda LAFCO’s determinations regarding the provision of municipal services can be

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<sup>88</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, pages 102 and 120

<sup>89</sup> Lapsley and Sumner, *Realizing the Heritage* 2022, page 9

accomplished through various changes of organization such as annexations, consolidations and approvals of out-of-area service agreements. These governance options allow cities, special districts and the County governments to provide municipal services to landowners throughout the county. Alameda LAFCo is authorized to approve, with or without amendments, out of area service agreements.

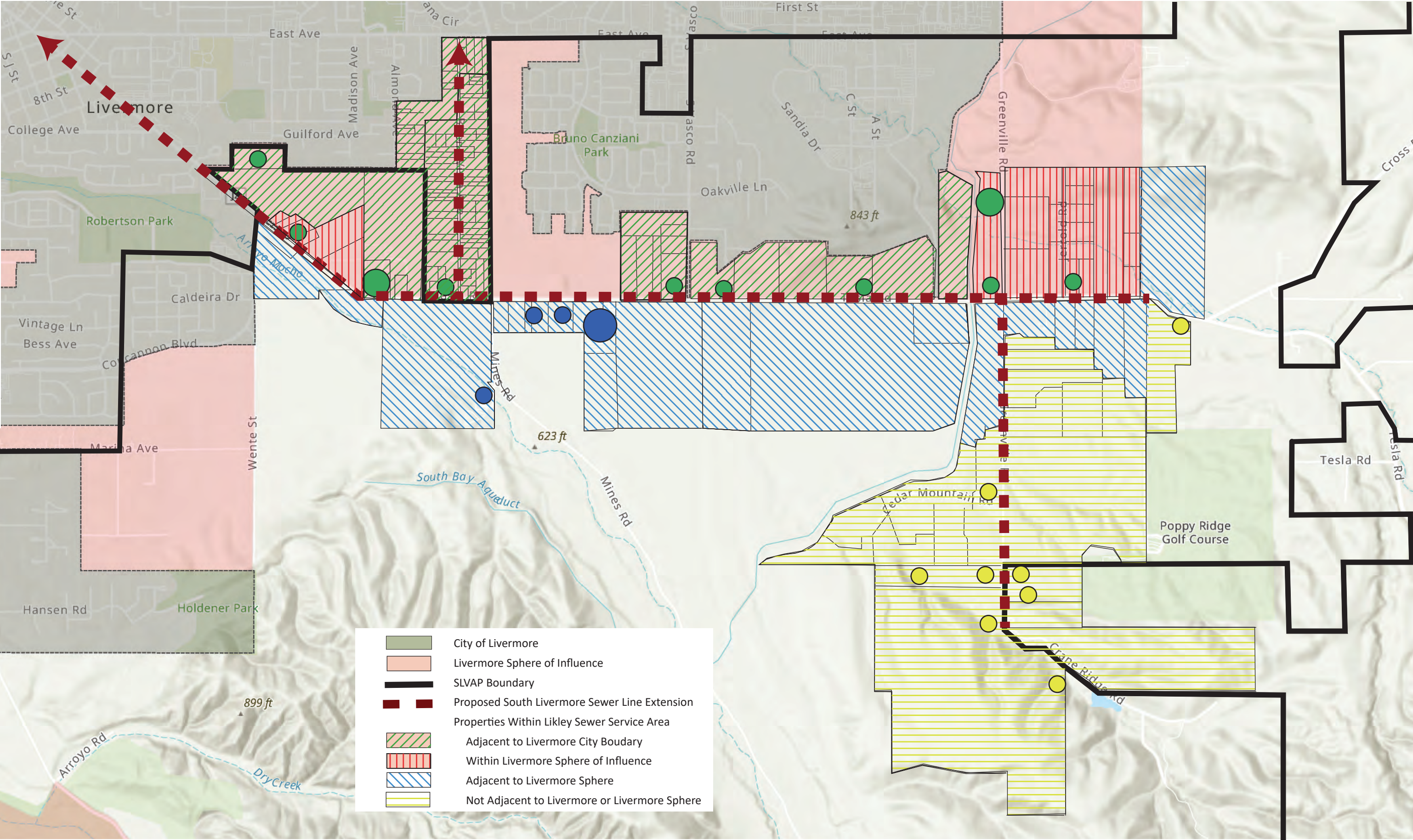
A portion of the South Livermore Sewer Extension project and certain lands to be served by this sewer extension are located within the City of Livermore's adopted Sphere of Influence, but outside of the City's established jurisdictional boundary and outside of the City's/Measure D Urban Growth Boundary. Other portions of the Sewer Extension project and lands likely to be served by this sewer extension are located outside of but adjacent to the City of Livermore's Sphere of Influence, and other portions of the Sewer Extension project and lands likely to be served are not adjacent to Livermore's Sphere. The likely service area for the South Livermore Sewer Expansion Project (i.e., properties that are adjacent to or in immediate proximity to the proposed sewer line alignment) includes approximately 200 separate properties and comprises about 2,710 acres of land (see **Figure 11**).

The extension of a City of Livermore sewer line to currently unincorporated territory is subject to LAFCO's approval, via an out-of-service-area agreement and/or annexation.

- Under an annexation scenario, the City may request annexation of the affected territory. This would allow the City to complete its proposed project without building in two different jurisdictions.
- Alternatively, the City may request an out-of-area service agreement from LAFCO, if it meets the statutory criteria outlined in Government Code Section 56133, and the Commission's adopted policies. If so, this would allow the City to provide wastewater services to the affected territory without amending its City limits.

Specific consideration of changes in organization, annexation and/or out-of-area service agreement(s) as directly related to the statutory criteria of Government Code Section 56133 and the Commission's adopted policies, is addressed below.





**Figure 11**  
**Likely Service Area for Livermore Sewer Line Expansion Project**



## Changes in Organization

Pursuant to the Cortese-Knox- Hertzberg Act (per Government Code Section 56010 through 56081) a change of organization is defined as an alteration of government structure, including city incorporation; district formation; annexation to or detachment from a city or district; city disincorporation or district dissolution; city or district consolidation; or merger or establishment of a subsidiary district. Alameda LAFCO policies relevant to changes in organization include the following.<sup>90</sup>

***General Policy 1.4:*** *The Commission shall seek to approve changes of organization that encourage and provide planned, well ordered, efficient development patterns that include the appropriate preservation and conservation of open space and prime agricultural lands within and around developed areas and contribute to the orderly formation and development of local agencies based upon local circumstances and conditions.*

Consistency Considerations: Measure P, which the Livermore voters approved in 2022, amended City General Plan policies relative to the Urban Growth Boundary, but did not change the location of the Urban Growth Boundary, and did not amend the land use policies of Alameda County's SLVAP or Alameda County Measure D. Measure P only allows the City to pursue the provision of sewage treatment and disposal services to properties located outside the Livermore Urban Growth Boundary that are designated for agricultural uses, potentially with associated allowable commercial uses. Measure P includes conditions that define conservation easements that must be recorded on those properties if they receive sewer service, as well as limits on the maximum permitted amount of commercial use in the Livermore Valley. These provisions of Measure P retain current plans and policies related to well ordered, efficient development patterns, appropriate preservation and conservation of open space and prime agricultural lands, and the orderly formation and development of local agencies based upon local circumstances and conditions.

***General Policy 1.7:*** *No application for a change of organization will be deemed filed until a Plan for Providing Municipal Services is received and accepted as complete by the Executive Officer. All service providers must document their ability to provide service to proposed service areas. An evaluation of a local agency's plan of service is necessary for proper consideration of any change of organization or reorganization (\$56375) that expands or diminishes a service provider's responsibilities. The intent of plans of service evaluations is to ensure that the capacity, cost and adequacy of services within the district or city are not adversely impacted by the proposed LAFCO action.*

Consistency Considerations: The City of Livermore has not yet applied to Alameda LAFCO for any type of change in organization. When such application is filed, it will need to include a Plan for Providing Municipal Services, documenting the City's ability to provide extended sewer service without diminishing the City's responsibilities related to capacity, cost and adequacy of sewer collection, treatment and disposal. These issues were addressed in the City of Livermore's certified South Livermore Sewer Expansion Project EIR, concluding the following:

- The total peak sewer flow from all existing uses that could potentially discharge to the Livermore Water Reclamation Plan (LWRP) with implementation of the Sewer Extension project is estimated at 106,464 gallons per day, with peak sewer flows under a buildout scenario along the sewer alignment estimated at 141,335 gallons per day. Peak wet weather sewer flows are estimated at 308,800 gallons per day, and ultimate peak wet weather flows are estimated at 396,000 gallons per day. A preliminary analysis indicates that, with implementation of the Bottleneck Project along East Street,

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<sup>90</sup> Alameda Local Agency Formation Commission (Alameda LAFCO), *Guidelines, Policies and Procedures* , General Proposal Policies and Specific Proposal Policies

the existing sewer conveyance system could handle the estimated peak wet weather instantaneous flow (HydroScience 2022).<sup>91</sup>

- Untreated organic flows from wineries could overload the treatment processes at the LWRP. The Livermore Municipal Code prohibits discharge into the City's system that would interfere with the performance or operation of the LWRP. Therefore, pre-treatment of the organic flows from wineries that apply for a sewer connection to the proposed system may be required upon City approval of future connections to reduce the potential for the increased sewer flows to overload the treatment processes at the LWRP. The impacts of organics in sewage from wine production on the treatment processes at the LWRP would need to be studied further to determine whether and what level of pre-treatment by individual users would be required.<sup>92</sup>
- The Sewer Extension project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan, SLVSP and SLVAP, in conformance with Alameda County Measure D. Future projects would be required to obtain commitments from the City of Livermore to provide wastewater treatment services prior to construction, which would be dependent on remaining treatment capacity at the LWRP.<sup>93</sup>
- As of the date of this Special Study, a budget for Livermore's sewer extension project has not been finalized. Preliminary construction estimates indicated a total cost of \$11.5 to just over \$12 million dollars for the full Project (phases I, II and III), but final engineering and construction costs have yet to be developed. It is anticipated that the costs for engineering and construction will be borne by a variety of public funding sources, and not expected to rely on private funds from those who receive new sewer service.
- For those residential property owners who choose to obtain new City of Livermore sewer services, they will need to pay a one-time connection charge to the sewer system and will then pay applicable fixed monthly sewer service charges that apply to all Livermore residential properties. All non-residential properties (including wineries) will pay a monthly fixed charge, plus an additional variable rate based on the property type and the amount of wastewater the property generates during the billing cycle. Customer types that discharge higher-strength wastewater will have higher rates, because their wastewater is more expensive to treat.

Per the City of Livermore's Sewer Extension Project EIR, the City does have the capacity to provide sewer services to certain rural and agricultural land uses outside of its current service district, where no other alternative special district can provide such services.

**General Policy 2.6:** *LAFCO shall not act upon any change of organization or reorganization until environmental documentation has been approved that adequately addresses all potential areas of environmental concern.*

Consistency Considerations: In July of 2022, the City of Livermore certified the South Livermore Sewer Expansion Project EIR and approved ballot initiative language to extend sanitary sewer service beyond the Urban Growth Boundary. The certified EIR recognizes that LAFCO has discretionary approval authority as a Responsible Agency over subsequent actions, including out of area service agreements or annexation required to receive sewer service. Alameda LAFCO will need to consider whether the City's EIR has adequately addressed environmental concerns regarding those direct or indirect effects of the

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<sup>91</sup> City of Livermore, South Livermore Sewer Expansion Project Final EIR, June 2022, page 4.2-16

<sup>92</sup> Ibid, page 4.2-17

<sup>93</sup> Ibid, page 4.2-21

project on the environment, in particular the environmental consequences associated with provision of municipal services to areas currently outside the boundaries of the City of Livermore.

***Specific Proposal Policy 2.2:*** *The fundamental policy of the Commission in considering the development status of land, located in or adjacent to an established city SOI boundary and contiguous to a city boundary, shall be that such urban development is preferred in cities. This policy is based on the fact cities exist to provide a broader range of services than do special districts.*

Consistency Consideration: The City of Livermore's Sewer Extension Project, including the provisions of Measure P, do not change the development status of any land located in or adjacent to the City's boundary, Sphere of Influence, or UGB. The Sewer Extension Project does not provide for the extension of urban development to any properties that are outside of the City's existing city boundary. The Sewer Extension project's new sewer lines would only support existing uses, and future development that is consistent with the General Plan, SLVSP and SLVAP in South Livermore Valley, subject to Alameda County Measure D.

## Annexation

Pursuant to the Cortese-Knox- Hertzberg Act, annexation is defined as the inclusion of additional territory in a city or special district. Although no petition or application for annexation has yet been made, one option that would allow the City of Livermore to provide sewer services to properties that are currently outside of its City limits would be to annex all or a portion of these lands. Alameda LAFCO policies relevant to annexations include the following.

***Specific Proposal Policy 1.2:*** *Annexations not initiated by LAFCO shall not be approved unless the annexing agency is willing to accept the annexation.*

Consistency Consideration: Alameda LAFCO has not initiated any actions relative to the annexation of lands to the City of Livermore. Should an annexation petition or application action arise, it is assumed that such a petition or application would be initiated by the City of Livermore. Per the City's Sewer Extension Project EIR, the City has already stated its willingness to extend sewer services for the purposes of improving groundwater quality in the South Livermore Valley area, and facilitating development of existing and new wineries, visitor serving commercial uses and residences consistent with the City's General Plan, SLVSP, and SLVAP, and enhancing the short- and long-term economic viability of agriculture and viticulture in the South Livermore Valley area.

***Specific Proposal Policy 1.7:*** *LAFCO discourages the annexation of vacant land or extension of urban services unless there is a demonstrated near term (within five years) need for services.*

Consistency Consideration: In 2018, Alameda LAFCo conducted a Municipal Services Review (MSR) of the services provided by each of the cities in Alameda County. Based on that MSR, the City of Livermore's present and planned land uses are adequate for existing residents as well as future growth. There were no anticipated changes in the type of public services and facilities required within the SOI for the City of Livermore, although the level of demand for these services and facilities will increase commensurate with anticipated population growth over the next five years. There are no Disadvantaged Unincorporated Communities within or contiguous to the SOI for the City of Livermore and therefore no present or probable need for new facilities or services for Disadvantaged Unincorporated Communities.<sup>94</sup>

The MRS does not demonstrate a near-term need for the extension of urban services. Rather, the Sewer Extension project is intended to achieve Livermore and County objectives related to the following:

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<sup>94</sup> Alameda LAFCO, Resolution No. 2018-09, Reaffirming the Existing Sphere of Influence for the City of Livermore, January 11, 2018



- Improve groundwater quality in the South Livermore Valley area relative to nitrates
- Facilitate the development potential of existing and new wineries, visitor serving commercial uses and residences consistent with the City's General Plan, SLVSP, and South Livermore Valley Area Plan (SLVAP) subject to Alameda County Measure D
- Enhance the short- and long-term economic viability of agriculture and viticulture in the South Livermore Valley area

***Specific Proposal Policy 1.9:*** *Prior to annexation to a city or special district, the petitioners shall provide information demonstrating that the need for governmental services exists, the annexing agency is capable of providing service, that a plan for service exists, and that the annexation is the best alternative to provide service.*

Consistency Consideration: The City of Livermore has not yet petitioned Alameda LAFCO for any annexations. If (or when) such a petition is filed, it will need to include a Plan for Providing Municipal Services, documenting the City's ability to provide extended sewer service (these issues were fully addressed in the City of Livermore's certified South Livermore Sewer Expansion Project EIR). Information included in this Special Study demonstrates that there are strong environmental and economic benefits associated with the provision of sewer services to portions of the Livermore Valley rather than continued reliance on on-site wastewater treatment systems. Whether annexation is the best alternative to provide these sewer services, as compared to an out-of-area contract, remains an open question.

***Specific Proposal Policy 1.15:*** *LAFCo shall disapprove proposals including annexation of territory subject to a Williamson Act contract if any city or special district would provide facilities or services related to sewers, non-agricultural water, or streets and roads in the territory under contract unless lands to be annexed that are within an adopted SOI, shall be physically contiguous to present agency boundaries unless one of the following conditions exists:*

- Existing developed areas where it can be clearly found that interests of public health, safety, and welfare would best be served by the addition of the service, or which present clear or present health or safety hazards that could be mitigated by the requested change of organization;*
- Existing developed areas where agency facilities are present and sufficient for service and where the Commission determines that the annexation does not represent a growth-inducing factor for the area; or*
- Lands that are owned by the city and are being used for municipal purposes at the time Commission proceedings are initiated, and do not exceed 300 acres in area. If the city sells noncontiguous territory or leases it for development of shopping, hotel, motel or other lodging purposes, noncontiguous territory shall be automatically detached.*

Consistency Consideration: Of the 200 properties within the likely service area for the South Livermore Sewer Expansion Project, 28 properties (or 14%) are under Williamson Act contract, and of the of the 2,710 acres within the likely service area for the South Livermore Sewer Expansion Project, nearly 1,200 acres (or 44%) are under Williamson Act contract. Only 7 of these properties are physically contiguous to the present City of Livermore boundary or within its Sphere of Influence.

Of those remaining Williamson Act properties not contiguous to the Livermore boundary or within Livermore's Sphere of Influence, none of these properties has clearly defined health or safety hazards that could only be mitigated by providing sewer service, none of these properties have City sewer lines currently present and sufficient for service, and one of these properties is owned or used for municipal purposes (the Alameda County Martinelli Event Center is not on land under Williamson Act contract).

However, Measure P (the ballot measure approved by Livermore voters that enabled the potential for implementation of the South Livermore Sewer Expansion Project) includes conditions that define conservation easements that must be recorded on those properties if they receive sewer service, as well

as limits on the maximum permitted amount of commercial use in the Livermore Valley. These provisions of Measure P retain current plans and policies related to well ordered, efficient development patterns, appropriate preservation and conservation of open space and prime agricultural lands, and substantially limit the potential for expanded sewer service to be a growth-inducing factor for the area.

***Specific Proposal Policy 2.3:*** *Developed lands that benefit from municipal services and are contiguous to a city boundary, should be annexed to the city providing such services.*

***Specific Proposal Policy 2.4:*** *Land may not be annexed to a city unless it is contiguous to the city at the time the proposal is initiated unless the land is owned by the city, is being used for municipal purposes at the time Commission proceedings are initiated, is within the same county as the city, and does not exceed 300 acres in area.*

Consistency Consideration: Of the 200 properties within the likely service area for the South Livermore Sewer Expansion Project, approximately 144 properties, including about 107 parcels within the Buena Vista neighborhood (or more than 70%), are located either contiguous to the City of Livermore boundary or within the City of Livermore's Sphere of Influence. Of the 2,710 acres within the likely service area, those properties within Livermore's Sphere of Influence amount to approximately 950 acres of land (or about 30% of the potentially served area).

These properties are all within Alameda County, only one of these properties (the Alameda County Martinelli Event Center) is used for municipal purposes, and these properties combine for far more than 300 acres in area.

**Specific Proposal Policy 2.5:** A city shall pre-zone undeveloped property to be annexed before the Commission takes action on the annexation. No changes to the general plan or zoning shall be made for two years after LAFCO approves a proposal unless the annexing city determines that substantial changes have occurred that necessitate such actions.

Consistency Consideration: Based on the Livermore City Attorney's impartial analysis of Measure P, sewer service would only be extended to residential properties or agricultural properties that permit commercial uses that are permitted by Alameda County's SLVAP and allowed by Alameda County's Measure D. Measure P did not change the location of the South Livermore Urban Growth Boundary, did not amend Alameda County's SLVAP, and did not amend Alameda County's Measure D.

No annexations have yet been proposed, no pre-zoning of lands outside of Livermore has yet been suggested, and no related annexation requests are currently before the Commission at this time. However, the City of Livermore's General Plan does include a land use designation of Rural Residential (RR) for the Buena Vista neighborhood, and a land use designation of Agriculture/Viticulture (AG/VT) for all other lands within its Sphere and within the likely service area for the South Livermore Sewer Expansion Project.

## **Out of Area Contracts**

The following particularly relevant LAFCO policies pertain to the potential for Out of Area Contract(s):

**Specific Proposal Policy 16.1:** LAFCo will encourage jurisdictional changes rather than out-of-area contracts if territory is within a city's or district's SOI and can be efficiently served by the agency.

Consistency Consideration: Of the 200 properties within the likely service area for the South Livermore Sewer Expansion Project, approximately 58 properties (or about 30%) are located outside of the City of Livermore and its Sphere of Influence. Of the 2,710 acres within the likely service area, those properties outside of Livermore and its Sphere of Influence amount to approximately 1,760 acres of land (or about 70% of the potentially served area).

**Specific Proposal Policy 16.3:** LAFCo shall only authorize a city or district to provide new or extended services outside its jurisdictional boundaries and SOI if an existing or pending public health and safety threat exists, if

documentation of the public health and safety threat is provided, and if any alternative service providers have been notified of the pending request and are unable or unwilling to provide service.

*Consistency Consideration:* In its General order, the California Water Resources Control Board defines process water as “waste”, and that “the discharge of winery waste can affect the quality of waters of the state”. Zone 7 has identified nitrates as a “constituent of concern” and has identified ten local areas of concern where nitrate has been detected at concentrations above the Maximum Contaminant Level as established by regulatory water quality standards (i.e., the primary Maximum Contaminant Levels set by the EPA and the State of California Environmental Protection Agency).

There is no reason to believe that implementation of the State Water Board’s General Order for Wineries, and on-going implementation of Zone 7/Alameda County Department of Environmental Health’s on-site wastewater treatment system loading limits and other Special Permit Area requirements will be unable to address nitrate loading concerns in the area, or Zone 7’s continued sustainable management of the Main Basin’s groundwater quality on a regional basis.

Alternatively, the proposed extension of sewer service to areas outside of Livermore’s Sphere of Influence would remove certain sources of nitrates and allow nitrate levels to naturally break down in the groundwater, such that water quality will improve over an extended time without further treatment. The availability of a municipal sewer may also serve as an economic and ease-of-management incentive that might encourage new mid- to larger-sized wineries, thereby increasing the demand for grapes and potentially encouraging additional vineyard plantings within the Livermore Valley.



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