

3. Agriculture and Forestry Resources

Since the European settlement of the City of Livermore, it has been a ranching and agricultural town, and the agriculture and wine sector remains one of the largest industries surrounding the city today. While much of the land within the City Limits has been urbanized, the majority of land outside the City Limits remains in agricultural use and contributes to the economic and cultural importance of the community. This report uses the term “Livermore” to cover the City of Livermore together with the immediately surrounding area within the Urban Growth Boundary (UGB) and Sphere of Influence (SOI). See the Introduction for more information on these boundaries. This chapter describes the regulatory framework and existing agricultural and forestry conditions in Livermore.

3.1 REGULATORY FRAMEWORK

This section summarizes agriculture regulations at the state, regional, and City level.

3.1.1 STATE REGULATIONS

3.1.1.1 FARMLAND MAPPING AND MONITORING PROGRAM

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the State’s natural, cultural, and historical resources. The California Natural Resources Agency’s Department of Conservation provides technical services and information to promote informed land use decisions and sound management of the State’s natural resources. The Department of Conservation manages the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. Every two years, the FMMP publishes a field report for each county in the state. FMMP released the most recent field report for Alameda County in 2018. The Alameda County Important Farmland 2018 Map categorizes land by agricultural production potential, according to the following classifications:¹

- **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance** is similar to Prime Farmland, but with minor shortcomings, such as steeper 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.

¹ State of California Department of Conservation, Farmland Mapping and Monitoring Program, Alameda County, <https://www.conservation.ca.gov/dlrp/fmmp>, accessed on September 14, 2021.

AGRICULTURE AND FORESTRY RESOURCES

- **Unique Farmland** consists of lesser quality soils used for the production of the State’s leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.
- **Farmland of Local Importance** includes land that is not irrigated but is cultivated or has the potential for cultivation.
- **Grazing Land** is the land on which the existing vegetation is suited to the grazing of livestock.
- **Urban and Built-Up Land** is occupied by structures with a building density of at least one unit per 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential structures, industrial structures, commercial structures, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment structures, and water control structures.
- **Other Land** is land not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as other land.
- **Water** is used to describe perennial water bodies with an extent of at least 40 acres.

3.1.1.2 WILLIAMSON ACT

The California Land Conservation Act of 1965, better known as the Williamson Act, conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by local governments under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value. Nonrenewal status is applied to Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases. Alameda County implements the Williamson Act program through the Alameda County Agricultural Preserve Program.

3.1.1.3 CALIFORNIA 2030 NATURAL AND WORKING LANDS CLIMATE CHANGE IMPLEMENTATION PLAN

The California 2030 Natural and Working Lands Climate Change Implementation Plan is a joint effort conducted by the California Environmental Protection Agency, California Natural Resources Agency, the California Department of Food and Agriculture, the California Air Resources Board, and the California Strategic Growth Council. The Plan defines and recognizes the importance of the state’s natural and working lands and the role that they play in preserving the environment and providing vital resources. The Plan outlines techniques on how to protect these lands, which include farmland, riparian areas, forests, grasslands, and urban green spaces, among others.

AGRICULTURE AND FORESTRY RESOURCES

3.1.2 REGIONAL REGULATIONS

3.1.2.1 MEASURE D

Measure D, proposed as an initiative and passed by Alameda County voters in November 2000, established a County Urban Growth Boundary (UGB) that generally coincides with existing City boundaries and/or City Limits. Measure D required that the County redesignate undeveloped lands outside the UGB from urban development or “Urban Reserve” to agricultural and open space uses. Any new urban development in Alameda County will be directed to areas within the UGB.

With the passage of Measure D, the North Livermore Intensive Agriculture Area was also established, enabling a minimum parcel size in the area of 20 acres per unit, provided that these parcels be used primarily for cultivated agriculture, and that achievement of numerous economic and environmental criteria pertaining to cultivated agriculture could be demonstrated. Measure D also created the following series of new requirements that must be met before any new development parcels are created in the North Livermore Intensive Agriculture Zone:²

- The County Board of Supervisors must find that an adequate, sustainable, and safe supply of water exists for both agriculture and other new uses.
- Parcel owners must agree to transfer to a land trust a land conservation easement that bars development not included in the initiative.
- Agricultural land must be cultivated for a minimum time period.
- The County is to establish a trail system in intensive agricultural zones for public education purposes.
- Commercial uses are to be limited to agriculture-enhancing uses.
- Irrigation uses in the area will not diminish the quality of the drinking water supply.
- Customary development fees must be paid.

These conditions, combined with the agricultural and resource management designations applied in North Livermore, effectively limit the potential for new residential uses in North Livermore under County jurisdiction. For the South Livermore Valley, Measure D confines the expansion of residential uses within the South Livermore Urban Growth Boundary.³ These areas include the agricultural land located directly to the south of the Livermore City Limits.

² City of Livermore, 2003, Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report, Volume I: Master Environmental Assessment, State Clearinghouse No. 2003032038, page 23.

³ City of Livermore, 2003, Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report, Volume I: Master Environmental Assessment, State Clearinghouse No. 2003032038, page 23.

AGRICULTURE AND FORESTRY RESOURCES

3.1.2.2 ALAMEDA COUNTY EAST COUNTY AREA PLAN

The East County Area Plan (ECAP) outlines goals, policies, and programs to preserve natural open space and agricultural lands for the eastern portion of Alameda County while ensuring adequate development to accommodate the growing population. The ECAP covers the area surrounding Livermore. First adopted in 1994 as a component of the Alameda County General Plan, the passage of Measure D in November 2000 initiated amendments to the ECAP which were subsequently included by adoption in November 2000 with the passage of the Measure D ballot measure. The amendment to the ECAP in November 2000 revised the ECAP to include the UGB and to provide specific direction to preserve viticulture and other cultivated agricultural land surrounding the Livermore City Limits.⁴

3.1.3 LOCAL REGULATIONS

3.1.3.1 LIVERMORE 2003-2025 GENERAL PLAN

The Land Use, Open Space and Conservation, and Economic Development Elements of the 2003-2025 Livermore General Plan contains goals, objectives, policies, and actions related to agricultural and forestry resources. Table 3-1 identifies the goals from the pertaining to the preservation and protection of agricultural and forestry resources and a summary of the associated policy topic. All General Plan goals and associated objectives, policies, and actions can be found on the City of Livermore’s website.⁵

TABLE 3-1 LIVERMORE 2003-2025 GENERAL PLAN GOALS RELATED TO AGRICULTURE AND FORESTRY

Goal No.	Goal Description
LU-2	The City recognizes that it has an overriding responsibility to promulgate policies and programs, which will result in the management of growth to best serve the health, safety, and general welfare of its residents. Objectives, policies, and actions under Goal LU-2 cover the preservation of the City’s UGB in order to not infringe on agriculture and open space.
LU-14	Take a proactive approach to protect, enhance, and increase viticulture and other cultivated agriculture. Objectives, policies, and actions under Goal LU-14 cover techniques to protect existing viticulture and cultivated agricultural lands.
LU-15	Preserve South Livermore’s unique rural and scenic qualities. Objectives, policies, and actions under Goal LU-15 pertain to the preservation of agricultural land in the South Livermore Valley specifically.
LU-16	Discourage and minimize development on lands with existing vineyards and on lands suitable for viticulture. Objectives, policies, and actions under Goal LU-16 pertain to the preservation of land used for viticulture in the South Livermore Valley Area.
LU-19	Establish and maintain urban development criteria for the South Livermore Valley. Objectives, policies, and actions under Goal LU-19 pertain to adopting specific development criteria in the South Livermore Valley Area to ensure that potential development in this area does not impede on existing or future viticulture land.

⁴ Alameda County. Adopted 1994. Amended 2000. East County Area Plan, <https://www.acgov.org/cda/planning/generalplans/documents/EastCountyAreaPlancombined.pdf>, accessed on September 28, 2021.

⁵ City of Livermore. 2021. *2003-2025 General Plan*. Available online: <https://www.cityoflivermore.net/government/community-development/planning/2003-2025-general-plan>. Accessed: September 2021.

AGRICULTURE AND FORESTRY RESOURCES

TABLE 3-1 LIVERMORE 2003-2025 GENERAL PLAN GOALS RELATED TO AGRICULTURE AND FORESTRY

Goal No.	Goal Description
LU-20	Maintain the rural qualities of the unincorporated part of the Livermore Planning Area. Objectives, policies, and actions under Goal LU-20 more generally outline ways to preserve and enhance agricultural land and natural beauty in the areas surrounding the Livermore City Limits.
OSC-1	Conserve the value and function of Livermore’s open space as a biological resource. Objectives, policies, and actions under Goal OSC-1 cover biodiversity, including conserving Livermore’s native trees and wooded areas.
OSC-3	Protect agricultural open space in the Planning Area and the City. Objectives, policies, and actions under Goal OSC-3 outline ways to preserve agricultural land and open space as natural resources surrounding the Livermore City Limits.
ED-1	Maintain and expand a diverse economy to ensure economic vitality. Objectives ED-1.2 and the associated policies and actions highlights the importance of the agricultural community on the city’s economy and provides direction on how to preserve and enhance that economy.

Source: 2025 Livermore General Plan

3.1.3.2 LIVERMORE MUNICIPAL CODE

The goals, objectives, policies, and actions in the 2003-2025 General Plan are further reinforced through implementation of the Livermore Municipal Code (LMC) and the Livermore Development Code (LDC), described in more detail in Section 3.1.3.3. The LMC is responsible for regulating activities which occur in the City Limits, including administration protocol, City finances, general regulations, and more. The LMC is organized by title, chapter, and section. The LMC includes two provisions related to agricultural resources, as follows:

- **Chapter 3.27, *Transferrable Development Credits In-Lieu Fees*** establishes a revenue fund paid by residential developers in Transferrable Development Credit (TDC) designated areas in exchange for new residential land use designations or increases in density. The in-lieu fees finance open space acquisition in fee title or conservation easement for permanent protection of agriculture and other open space lands in the north Livermore area. The TDCs implement provisions of the North Livermore UGB Initiative, which is explained in Section 3.1.3.4. Further, in specific plan areas, such as the South Livermore Valley (SLV) Specific Plan, the plan itself states TDC requirements, if any apply.
- **Chapter 8.16, *Right to Farm*** serves to protect agricultural land uses and designations identified in the general plan and zoning map from conflicts with non-agricultural land uses that may result in financial hardship to agricultural operators or the termination of their operation. This chapter also promotes harmony between agricultural and residential land uses through the advising of purchasers and residents of property near agricultural operations of the inherent potential inconveniences associated with such purchase or residence including, but not limited to, sounds, odors, dust, and chemicals.
- **Chapter 12.20, *Street Trees and Tree Preservation*** outlines the preservation and maintenance of street trees, along with the provisions of the Livermore Tree Preservation Ordinance. The Livermore Tree Preservation Ordinance protects trees on public and private property that provide tangible benefits to the community to promote a healthy urban forest that reduces air and noise pollution, provides energy-saving shade, provides habitat for wildlife, and enhances aesthetics. The Ordinance protects all ancestral trees designated by the City Council as being unique or of importance, and California native trees.

AGRICULTURE AND FORESTRY RESOURCES

3.1.3.3 LIVERMORE DEVELOPMENT CODE

The City of Livermore regulates land use and design through the LDC, a form-based code which helps achieve the 2003-2025 General Plan's goals of sustainability development of high-quality infill development. The LDC is an alternative approach to zoning that reinforces walkable, sustainable mixed-use environments and development and builds upon community character. The LDC uses a transect approach to land use and design which allows the City to maintain both its urban center and its rural and agricultural borders by scaling down development as it moves farther away from the urban core and closer to the rural and agricultural borders of the City Limits. The LDC reinforces goals in the 2003-2025 General Plan and chapters of the LMC mentioned in Section 3.1.3.2 to preserve agricultural land along the within and adjacent to the City Limits. Further, the LDC adopts design and development standards for all agricultural zones within the City Limits.

3.1.3.4 LIVERMORE URBAN GROWTH BOUNDARY

The City of Livermore is completely surrounded by an Urban Growth Boundary (UGB). The boundary is intended to protect existing agricultural uses and natural resources outside the City Limits from future urban development. This UGB was shaped by two local initiatives, the *North Livermore UGB Initiative* passed in March 2000 by the City Council and the *South Livermore UGB Initiative* passed by local voters in December 2002. While both these initiatives share the same goals of preserving agriculture and open space and preventing urbanization, policies regarding development beyond each UGB and changes to each UGB are different and are described in further detail in the 2003-2025 General Plan Land Use Element.⁶

3.1.3.5 SOUTH LIVERMORE VALLEY SPECIFIC PLAN

The South Livermore Valley Specific Plan Specific Plan, adopted in 1997 and amended in 2004, provides a framework for growth and development within an approximately 1,891-acre unincorporated area along the City of Livermore's southern boundary, located within the City Limits. The primary purpose of the SLV Specific Plan is to ensure comprehensive land use in the South Livermore Valley that promotes and conserves agricultural and natural resources. The SLV Specific Plan is consistent with, and serves as an extension of, the 2003-2025 General Plan and is used as a policy and regulatory document.⁷

⁶ City of Livermore, 2004, City of Livermore General Plan Land Use Element, pages 3-7 and 3-8.

⁷ City of Livermore, Adopted November 17, 1997, Amended February 2004, *South Livermore Valley Specific Plan*, Chapter 1.0 Introduction, page 1-1.

AGRICULTURE AND FORESTRY RESOURCES

3.2 EXISTING CONDITIONS

3.2.1 FORESTRY RESOURCES

Livermore does not contain any national- or state-designated forestland. Woodland and forested habitats are largely restricted to the north and east-facing slopes or higher elevations to the south and west of Livermore. Dense stands of trees exist in Livermore due to climate conditions and altitude. There are two woodland/forest communities in Livermore, blue oak wood land and coast live oak woodland as shown on **Figure 5-1** of Chapter 5, Biological Resources.⁸ Because of the lack of forested land in Livermore, the remainder of this chapter will focus on agricultural resources in and around Livermore.

3.2.2 AGRICULTURAL RESOURCES

3.2.2.1 LAND USE DESIGNATIONS

General Plan Land Use Designations

Land uses supporting agricultural resources, growing, and associated activities, are outlined in the 2003-2025 General Plan under six designations. These include:

- **Rural Residential (RR)**, which is intended as a transition area between urban and rural land and is used to establish the UGB surrounding the community. The minimum parcel size is 1 acre in the RR land use designation.
- **Limited Agriculture (LDAG)**, which is intended as a land use designation that provides a transition between areas of large parcel agriculture and the agriculture/viticulture designation. The minimum parcel size is 20 acres in the LDAG land use designation.
- **Large Parcel Agriculture (LPA)** is a designation from the Alameda County East County Area Plan that applies to locations outside the City’s UGB but within the SOI. The LPA is the default designation for all undesignated parcels in the General Plan Land Use Map and includes agricultural uses, processing facilities, support uses, secondary residential units, among other activities. The minimum parcel size is 100 acres in the LPA land use designation.
- **Resource Management (RMG)** is a designation in the Alameda County East County Area Plan and is intended mainly for land designated for long-term preservation as open space, which may include low-intensity agricultural uses. The minimum parcel size is 100 acres in the RMG land use designation.
- **Hillside Conservation (HLCN)** is intended to limit development on environmentally-sensitive lands and protect the viability of small-scale agriculture and grazing practices.
- **Agriculture/Viticulture (AGVT)** is intended to preserve and promote agriculture and viticulture uses in locations suitable for cultivated agriculture and to protect the rural character of the community. The minimum parcel size is 100 acres in the AGVT land use designation.

⁸ City of Livermore, 2004, *City of Livermore General Plan Open Space and Conservation Element*, page 8-6.

AGRICULTURE AND FORESTRY RESOURCES

South Livermore Valley Specific Plan Land Use Designations

Land uses supporting agricultural resources, growing, and associated activities, are outlined in the SLV Specific Plan under two designations. These include:

- **Agricultural Preserve (SV-AP)**, which includes agricultural land that cannot be developed or subdivided because they are placed under permanent agricultural easements. These areas are designated for intensive agriculture, particularly viticulture.
- **Vineyard Commercial (SV-VC)** includes areas that permit the limited development of wine country commercial uses that support the wine region.

3.2.2.2 CROP TYPES

The most comprehensive reporting on crop types in California occurs at the county level, as required by the California Department of Food and Agriculture in Section 2279 of the California Food and Agriculture Code. Alameda County is required to report the estimated total gross value of all crops in the county, listed by type, on an annual basis. The City of Livermore does not independently report agricultural production within the City Limit.

The most prevalent type of farmland in Alameda County in 2019 is field crops and fruit and nut crops. Field crops total approximately 136,500 harvested acres, comprised of range and pastureland, hay, alfalfa, wheat, and other field crops. Fruit and nut crops total approximately 4,520 bearing acres, largely comprised of red and white wine grapes, along with miscellaneous fruits and nuts such as olives, walnuts, pistachios, pomegranates, almonds, and avocados. Vegetable crops total approximately 140 harvested acres, including broccoli, cabbage, corn, leaf lettuce, greens, pumpkins, tomatoes, and squash. Nursery products, including ornamental trees and shrubs, along with bedding plants, cut flowers, and vegetable starts, total approximately 3 acres indoors and 130 acres outdoors. Alameda County also reported approximately 13,620 cattle and calves and an unknown number of sheep, pigs, goats, bee pollination, and apiary products.⁹

3.2.2.3 IMPORTANT AGRICULTURAL LAND

Livermore includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland as classified by the State Department of Conservation and as protected by the California Environmental Quality Act (CEQA). Livermore also includes Farmland of Local Importance and Grazing Land; however, these are not considered “farmlands of concern” under CEQA.

⁹ Alameda County Community Development Agency Department of Agriculture Weights and Measures, 2019, Alameda County 2019 Crop Report, <https://www.acgov.org/cda/awm/resources/2019cropreport.pdf>, accessed on September 15, 2021.

AGRICULTURE AND FORESTRY RESOURCES

Alameda County, which includes the City of Livermore, is predominantly made up of urban and built-up land, open space, and grazing land. Unincorporated areas to the north, east, and west of Livermore are currently used for rangeland, dry farmland, irrigated cropland, and uncultivated farmland. Agricultural uses south of Livermore include vineyards, orchards (mainly olives and nuts), rangeland, and uncultivated farmland. As shown on Figure 3-1, much of the land outside the City Limits, but within the SOI, which mapped as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

As shown in Table 3-2, most of the agricultural land in Livermore is Grazing Land and pastures.

TABLE 3-2 FARMLAND ACREAGE IN LIVERMORE

Types of Farmland	City Limits	Urban Growth Boundary*	Sphere of Influence*
Developed Land	13,356	13,342	13,504
Grazing Land	2,017	2,111	4,387
Prime Farmland	187	77	369
Farmland of Statewide Importance	206	38	414
Unique Farmland	537	240	760
Other Land	719	786	2,036

*Note: The totals for the Urban Growth Boundary and SOI include the area of the total boundary.
Source: ESRI, 2021; PlaceWorks, Farmland Mapping and Monitoring Program.

3.2.3 AGRICULTURAL CONSERVATION

Much of the area within Livermore’s City Limits has been urbanized. Population and job growth in the Livermore Valley, and the greater Alameda County, has resulted in pressure to develop housing and commercial establishments on lands historically used for agriculture, leading to an increasing agricultural land conversion rate since the 1980s. As indicated in **Table 3-3**, the acreages for Prime Farmland and Farmland of Statewide Importance have decreased by 67 and 40 percent, respectively. Unique Farmland has increased in acreage by 76 percent, while Grazing land has decreased by 6 percent.

TABLE 3-3 ALAMEDA COUNTY AGRICULTURAL LAND CONVERSION 1984 TO 2018

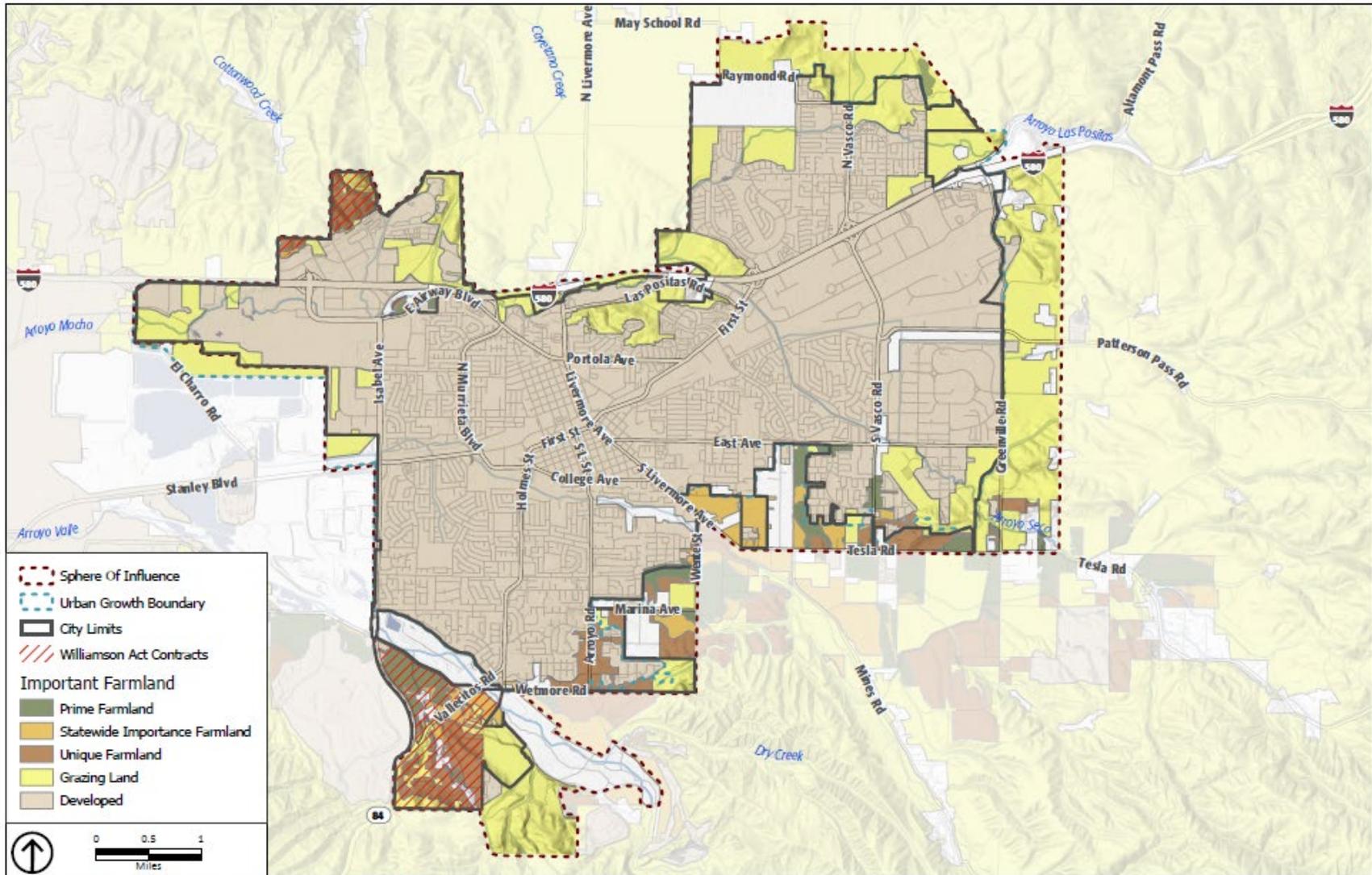
Land Use Category	1984 Acreage	2018 Acreage	1984 to 2018 Net Acreage Changed	Percent Change
Prime Farmland	9,809	3,277	-6,532	-67%
Farmland of Statewide Importance	1,870	1,125	-745	-40%
Unique Farmland	1,190	2,097	907	76%
Farmland of Local Importance	0	0	0	0%
Grazing Land	257,238	240,719	-16,519	-6%

Source: California Department of Conservation Historic Land Use Conversion Table.

Retention of important agricultural farmland has many benefits, which include availability of crop growing land that supports local economies, preserving open space, and controlling urban sprawl. As such, many federal, State, and local governments adopt mechanisms to safeguard the availability of agricultural lands, largely through conservation easements and mitigation. This section describes existing Williamson Act Contracts within Livermore and local efforts to conserve vital agricultural land.

AGRICULTURE AND FORESTRY RESOURCES

Figure 3-1 Important Farmland and Williamson Act Contracts



Source: California Department of Conservation, 2021; City of Livermore, 2021; Esri, 2021.

AGRICULTURE AND FORESTRY RESOURCES

3.2.3.1 WILLIAMSON ACT CONTRACTS

Alameda County’s Agricultural Preserve Program, as provided for by the Williamson Act, is meant to preserve and protect agricultural and open space lands for the production of food and fiber, as well as for limited types of open space that have scenic and habitat value. The program creates an arrangement whereby private landowners contract with the County to voluntarily restrict their land to agricultural and compatible open space land uses for a 10-year term. The contract gives property tax relief to the landowner in exchange for maintaining their land with agricultural production activities. Williamson Act Contracts are automatically renewed unless a landowner files a Notice of Non-Renewal. After the filing of a Notice of Non-Renewal, the property owner must not convert the land to non-agricultural uses for a period of 10 years.¹⁰

Alameda County is the agency responsible for entering into Williamson Act Contracts with landowners in and around Livermore. As shown on Figure 3-1, land under Williamson Act contracts are primarily located south of the City Limits, with select parcels to the north of the City Limits. As indicated in Table 3-4, active Williamson Act Contracts account for approximately 1,735 acres of farmland in Livermore.

TABLE 3-4 WILLIAMSON ACT LAND ACREAGE IN LIVERMORE

Land Use Category	City Limits	UGB	SOI	Total
Total Williamson Act Contracts	795	145	795	1,735
Total Williamson Act Contracts that are Prime Farmland	718	145	719	1,582

Source: ESRI, 2021; PlaceWorks, Farmland Mapping and Monitoring Program.

3.2.3.2 TRI-VALLEY CONSERVANCY LAND TRUST

Tri-Valley Conservancy is an accredited land trust protecting and advocating for agricultural land and open space around Livermore. The Tri-Valley Conservancy’s mission is to promote economically sustainable vineyards and orchards and increase permanently protected biologically diverse open spaces. The Tri-Valley Conservancy primarily acts through designation of conservation easements to protect a land’s valuable natural resources. Tri-Valley Conservancy works with willing landowners to acquire property development rights through the legal arrangement of a conservation easement, and, once the land is preserved, work with landowners to care for the land. These conservation easements offer landowners with flexible, voluntary alternatives to subdividing or developing their property. To date, the Tri-Valley Conservancy has helped preserve thousands of acres of open space for agriculture and parks. This includes 7,560 acres preserved through conservation easements in the South Livermore Valley, 515 acres preserved through acquisitions funded by Tri-Valley Conservancy funds and various grants, and 615 acres preserved across 10 easements through a bonus density program that allows property owners to

¹⁰ Alameda County Community Development Agency, 2011, General Plans, Ordinance, and Policies, Williamson Act Uniform Rules Introduction, I. Purpose of the Williamson Act Program and Uniform Rules, https://www.acgov.org/cda/planning/landuseprojects/documents/Introduction_Uniform_Rules_10-11-11.pdf, accessed September 15, 2021.

AGRICULTURE AND FORESTRY RESOURCES

subdivide their properties into 20-acre parcels provided they place their property under an agricultural conservation easement.

3.2.4 AGRICULTURAL ECONOMY AND AGRITOURISM

The agricultural heritage of Livermore is an anchor of the tourism industry in the Livermore Valley. The city is framed by award winning wineries, picturesque farmland, and ranches that mirror the valley's rich western heritage. One of California's oldest wine regions, the Livermore Valley played a pivotal role in shaping California's wine industry, starting in the 1760s.¹¹ Today, Livermore is surrounded by more than 50 wineries and over 5,000 acres of vineyard, and is now recognized as one of California's premiere wine regions.¹² With its luxury and boutique hotels, shops, and wineries, Livermore has become a large agritourism city in Alameda County.

As mentioned in Section 3.2.2.2, Crop Types, the growing of wine grapes is one of the most popular crops in Alameda County. In 2019, red wine grapes accounted for approximately 1,860 bearing acres totaling \$14,843,000 in revenue while white wine grapes totaled approximately 840 bearing acres totaling \$5,621,000 in revenue. A remaining \$2,035,000 in revenue was reported in 2019 due to miscellaneous fruit and nuts, \$3,349,000 in field crops, \$4,347,000 in nursery products, \$896,000 in vegetable crops, and approximately \$12,427,000 in livestock and poultry.¹³

3.2.5 AGRICULTURE AND CLIMATE CHANGE

In 2019, the state of California counted \$50 billion in cash receipts from the agricultural industry, making California the top agricultural producing state in the nation.¹⁴ The 2019 estimated total gross value of Alameda County's agricultural production was \$43,655,000, a 20-percent overall decrease from the 2018 estimated value of \$54,850,000. This observed decrease was due primarily to continued lack of adequate rainfall and a shift in commodity patterns to more permanent crops. Such a decrease also highlights broader climate issues that are beginning to impact the entire agricultural economy in California, the nation, and across the globe.

3.2.5.1 CLIMATE CHANGE IMPACT ON AGRICULTURE

The agriculture industry is dependent on a wide range of ecosystem processes that support productivity, including soil health and availability of adequate potable water supplies. Multiple stressors, including climate change, increasingly compromise the ability of ecosystems to provide these services. Influential near-term climate change effects on agricultural resources include the potential for increased soil erosion through extreme precipitation events, severe and/or prolonged regional droughts, and rising

¹¹ Livermore Valley Wine Country, Livermore Valley Wine Country, <https://www.lvwine.org/>, accessed September 15, 2021.

¹² Livermore Valley Chamber of Commerce, 2021, Yesterday and Today, <https://www.livermorechamber.org/livermore/yesterday-and-today>, accessed September 15, 2021.

¹³ Alameda County Community Development Agency Department of Agriculture Weights and Measures, 2019, Alameda County 2019 Crop Report, <https://www.acgov.org/cda/awm/resources/2019cropreport.pdf>, accessed on September 15, 2021.

¹⁴ California Department of Food and Agriculture, 2020, California Agricultural Statistics Review, 2019-2020, https://www.cdffa.ca.gov/Statistics/PDFs/2020_Ag_Stats_Review.pdf, accessed on September 15, 2021.

AGRICULTURE AND FORESTRY RESOURCES

temperatures. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality. Therefore, the predicted higher incidence of extreme weather events will have an increasing influence on agricultural productivity due to the intertwined nature of these ecosystems and weather events.¹⁵ More information on climate change and its impact the agriculture in Livermore can be found in Chapter 6, Climate Change and Resilience.

3.2.5.2 CARBON SEQUESTRATION ON AGRICULTURAL LANDS

According to the California 2030 Natural and Working Lands Climate Change Implementation Plan, 90 percent of the state’s land is considered “natural or working,” which includes rangeland, forests, woodlands, wetlands, farmland, riparian areas, and urban green space, among others. These spaces offer a multitude of environmental and climate change-related benefits, such as providing life-sustaining resources and sequestering carbon.¹⁶

Natural and working lands in Livermore include farmland, parks and open space, riparian corridors, urban trees, and woodlands. These areas are highly valuable in sequestering carbon in the city, which ultimately reduces annual greenhouse gas emissions released into the atmosphere. The loss of such lands can cause both short-term and long-term issues in Livermore, including loss of green space that provides shading or valuable resources, and general loss of carbon-capturing landscaping. Such loss can occur through direct takes, such as developing on the land, or indirect takes, such as climate-change driven disasters like wildfires that burn forests or cropland.

3.3 IMPLICATIONS FOR THE GENERAL PLAN UPDATE

Based on information contained in this chapter, the General Plan Update should consider the following:

- Conversion of agricultural lands to non-agricultural uses, particularly prime and other important agricultural lands.
- Enrollment in the Alameda County Williamson Act program.
- An agricultural lands offset program that requires the dedication of agricultural land elsewhere, or the payment of in-lieu fees, when impacting agricultural land.
- Agricultural tourism and community events.
- Sustainable agricultural concepts, water conservation, carbon farming and increased carbon sequestration, and alternative energy production.

¹⁵ United States Department of Agriculture, 2014, US Department of Agriculture Climate Change Adaptation Plan, http://web.archive.org/web/20170127183607/https://www.usda.gov/oce/climate_change/adaptation/USDA_Climate_Change_Adaptation_Plan_FULL.pdf, pages 9 and 10, accessed September 15, 2021.

¹⁶ State of California, 2019, California 2030 Natural and Working Lands Climate Change Implementation Plan, <https://ww2.arb.ca.gov/sites/default/files/2020-10/draft-nwl-ip-040419.pdf>, accessed on September 23, 2021.

AGRICULTURE AND FORESTRY RESOURCES

- Policies to ensure the agricultural industry is able to adapt to climate change and extreme weather events.
- Policies on how to protect and expand natural and working lands.