10. *Environmental Justice and Community Health*

The Environmental Justice and Community Health existing conditions report explains what environmental justice is under California law, presents information on population and health statistics, and addresses aspects of community health affected by the built environment, including active transportation and healthy food access. Understanding where and how residents of Livermore experience disproportionate socioeconomic and health outcomes will inform the work of the General Plan to address these inequities. This chapter 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.

The topics in this chapter are closely linked to several other chapters of the existing conditions report, including:

- Chapter 4, Air Quality, which explains the sources and levels of air pollutants that affect public health.
- Chapter 7, Circulation, which describes opportunities for active transportation. [1]
- Chapter 9, Economics, which analyzes both housing and job opportunities in the City.
- Chapter 14, Hydrology and Water Quality, which presents information on water pollutants that affect public health.
- Chapter 15, Land Use and Planning, which explains how land use and development are currently regulated.
- Chapter 17, Public Services and Recreation, which includes an overview of existing parks and recreational facilities and other public services.

10.1 REGULATORY FRAMEWORK

This section covers some of the key State, regional, and local regulations that influence public health and environmental justice in Livermore.

10.1.1 STATE REGULATIONS

Federal and State regulations in regard to "Clean Air" regulations are described in Chapter 4, Air Quality. Clean Air regulations sets standards for air emissions from station and mobile standards. The goal of these regulations is to protect public health and welfare and to regulation harmful emissions of air pollutants.

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[1] This chapter is currently being prepared and is expected to be published in early 2022.

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In 2008, the State of California adopted the California Complete Streets Act requiring cities and counties to make substantive changes to their circulation elements to plan for complete streets. The definition of complete streets and a description of the act is described more in detail in Chapter 7, Circulation.

State clean water regulations are described in more detail in Chapter 14, Hydrology and Water Quality. Clean water regulations control discharges of pollutants into US waters to protect people and the natural and built environment.

10.1.1.1   SB 1000 (PLANNING FOR HEALTHY COMMUNITIES ACT)

California SB 1000, the Planning for Healthy Communities Act, passed in 2016. The law requires that General Plans address environmental justice in "disadvantaged communities" (DACs) within the area covered by the General Plan.

"Environmental justice" is defined in California law as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.[2] California law further states that environmental justice includes, but is not limited to, the following:

- The availability of a healthy environment for all people.
- The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities.
- Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision-making process.
- At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land-use decisions.

SB 1000 says that environmental justice goals, policies, and objectives in General Plans must do the following:

- Reduce the unique or compounded health risks in disadvantaged communities by reducing pollution exposure and promoting public improvements, public services, community amenities, food access, safe and sanitary homes, and physical activity.
- Promote civil engagement in the public decision-making process.
- Prioritize improvements and programs that address the needs of disadvantaged communities.

DACs are defined as low-income areas that are disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation. The term "disadvantaged community" comes directly from State law; however, some communities prefer alternative terminology, such as environmental justice communities, equity opportunity communities, communities of concern, or frontline communities.

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[2] California Government Code, § 65040.12

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10.1.2 LOCAL REGULATIONS

10.1.2.1 2003-2025 LIVERMORE GENERAL PLAN

The City of Livermore 2003-2025 General Plan goals, policies, and actions related to environmental justice and community health are interwoven throughout each element of the General Plan. Table 10-1 lists related equity and community health policies in the existing General Plan.

TABLE 10-1   LIVERMORE GENERAL PLAN RELEVANT EQUITY AND COMMUNITY HEALTH POLICIES

Policy No.	Policy
LU-1.2.P1	Where possible, neighborhood and community commercial uses shall be integrated with public uses in similar areas as comprehensively designed service centers that include public facilities, day care centers, multi-purpose meeting places, health care facilities, housing for the elderly, transportation centers, and schools.
CIR-6.2.1	Require local roadway improvements to minimize adverse land use, air quality, noise, community appearance, health, safety, vegetation and wildlife, drainage, and other environmental impacts.
H-4.1.2.P1	This program aids low income homeowners by providing deferred payment loans of up to $35,000 for major repairs such as roof, furnace, and major electrical and plumbing repairs. The program also provides for installation of special amenities such as wheelchair ramps, support rail systems, and security/safety devices in housing occupied by elderly and disabled
H-4.1.P5	The Neighborhood Preservation section identifies health and safety issues associated with residential structures and responds to building and zoning code violations reported to the City. Neighborhood Preservation staff coordinates their investigations with other divisions to provide a link between the identification of structures needing repair (Building) and homeowners needing financial assistance to make necessary repairs (Housing and Human Services). The City also conducts bi-annual Housing Quality Inspections of multifamily complexes that have received US Department of Housing and Urban Development CDBG and HOME funding.`
INF-2.1.P1	Septic tanks shall be allowed only in agricultural zones if approved by Zone 7 and the Alameda County Health Department.
INF-9.1.P1	The City shall support and encourage the construction of healthcare facilities adequate to meet the needs of all residents and employees in Livermore.
OSC-6.1.A3	Seek means to meet State standards for emission of air pollutants so that vegetation (including crops), the visual environment, and public health will be protected.
N-1.1.P3	The City shall maintain a pattern of land uses that separates noise-sensitive land uses from major noise sources to the extent possible.
N-1.4.P3	The City shall provide planned industrial areas with truck access routes separated from residential areas to the maximum feasible extent. Consider methods to restrict truck travel times in sensitive areas.
PS-4.P5	When reviewing applications for new development in areas historically used for commercial or industrial uses, the City shall require environmental investigation as necessary to ensure that soils, groundwater, and buildings affected by hazardous material releases from prior land uses, and lead and asbestos potentially present in building materials, would not have the potential to affect the environment or the health and safety of future property owners or users.
PS-4.1.P7	The City shall ensure that new development and redevelopment shall protect the public health and safety through environmental investigations, as required by State and Alameda County regulations, relating to potential hazardous material releases from prior uses and lead and asbestos present in building materials
PS-7.1.P1	Develop and provide information to improve the understanding of the locations, potential impacts, and linkages among threats, hazards, vulnerability, and measures needed to protect life, safety, health, property, and the environment.

Source: 2025 Livermore General Plan

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10.2 EXISTING CONDITIONS

This section outlines the existing conditions for vulnerable groups as well as community health statistics of residents in the city of Livermore.

10.2.1 ENVIRONMENTAL JUSTICE

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of planning and environmental laws, regulations, and policies.

Environmental justice is achieved when every person can reach their optimal social, physical, and mental well-being at all stages of life, regardless of where they live or their racial and ethnic background. This section provides an analysis of Livermore's environmental justice indicators to help inform opportunities for the General Plan Update process to support the development of strategies to achieve a more equitable and environmentally just future.

10.2.1.1   WHAT IS ENVIRONMENTAL JUSTICE?

People of color and lower income households often have limited access to the health-promoting benefits of healthy communities, and instead experience a greater share of health-harming burdens. This is a social and economic dynamic referred to as environmental justice and can look like:

- Only having the option to rent or buy homes that are sited next to incompatible or unhealthy uses, like warehouses, industrial sites, freeways, or waste management facilities.

- Being unable to access high-quality and well-maintained public services or amenities, such as schools, parks, libraries, or community centers because the quality of these public amenities is often determined by the property values of homes—and property values of homes near incompatible uses are often lower than in areas without these incompatibility issues.

- Not being considered in or not having decision-making power during the review of projects and proposals that can often lead to even higher concentrations of health-harming burdens in neighborhoods that are already burdened.

10.2.1.2   DISADVANTAGED COMMUNITIES ASSESSMENT

The State recommends two methods for identifying disadvantaged communities (DACs): simply identifying low-income census tracts or using the California Communities Environmental Health Screening (CalEnviroScreen) Tool. CalEnviroScreen identifies California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution by evaluating 20 indicators of environmental justice in the following four areas:

- **Exposure Indicators**, including current contaminants residents are exposed to including ozone, particulate matter (PM) 2.5 micrometers or less in diameter, diesel particulate matter, drinking water contaminants, toxic releases from facilities, traffic density, and children's lead risk from housing.

- **Environmental Effect Indicators**, which are potential risk factors for exposure including hazardous waste generating facilities and solid waste facilities, cleanup sites, groundwater threats, and impaired water bodies.

- **Sensitive Population Indicators**, which are people especially vulnerable to exposure to environmental hazards, including people with asthma and cardiovascular disease and low birth weight infants.

- **Socioeconomic Indicators**, including factors such as educational attainment, income, poverty, unemployment, and linguistic isolation, which may indicate a greater vulnerability to environmental hazards.

Figure 10-1 shows the results of draft CalEnviroScreen version 4.0 in Livermore.

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Figure 10-1   CalEnviroScreen 4.0 Cumulative Health Impact Scores by Census Tract
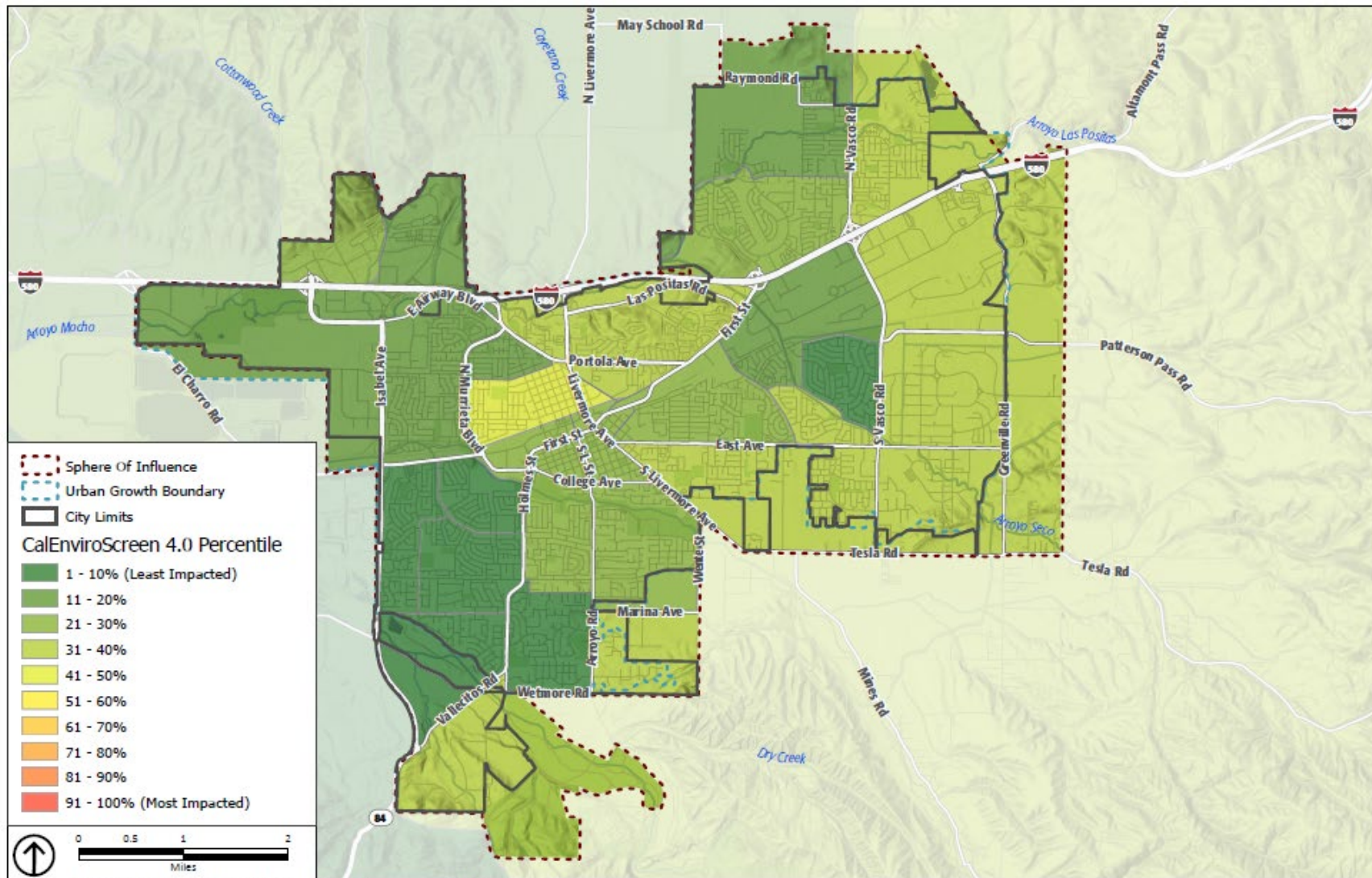
Source: OEHHA, 2021; CalEPA, 2021; City of Livermore, 2021; Esri, 2021.

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CalEnviroScreen quantifies a range of factors related to the combination of pollution burden and population characteristics and arrives at a score for every Census tract. In general, the higher the score, the more impacted a community is. Census tracts in the highest quartile of scores (75 to 100) are considered to be "disadvantaged communities" in the terms of SB 1000. In Livermore, no neighborhoods are categorized by CalEnviroScreen as disadvantaged communities based on their cumulative score, and the highest cumulative score reaches the 43rd percentile. Some communities meet the 75th percentile threshold in individual pollution exposure categories: particularly, groundwater threats and traffic. Groundwater threats are most prevalent in Livermore north of I-580, and traffic impacts are most severe along either side of the I-580 corridor.

10.2.2 POPULATION CHARACTERISTICS

10.2.2.1   RACE AND ETHNICITY

Livermore is enriched by a racially and ethnically diverse population. However, across California and the United States, communities of color often bear a disproportionate burden of environmental hazards. The race and ethnicity of Livermore's residents are important to understand when evaluating environmental justice and community health.

The population in Livermore remains predominantly white (76 percent) and is somewhat less diverse than Alameda County, as shown in **Table 10-2**. In Alameda County, only 41 percent of residents are white. However, Livermore has a similar portion of Hispanic/Latino residents as Alameda County overall. Over the past decade, there has been a modest shift towards increasing diversity in Livermore's population, with data showing increases in the share of Black, Asian, and multi-racial population since 2016.

Table 10-2   Comparison of Race/Ethnicity Composition, 2019

Race and Ethnicity	Livermore	Alameda County
White	75.9%	40.5%
Black or African American	1.8%	10.6%
American Indian and Alaska Native	0.3%	0.7%
Asian	11.6%	30.1%
Native Hawaiian and Other Pacific Islander	0.5%	0.8%
Some other Race	3.4%	10.8%
Two or More Races	6.4%	6.5%
Hispanic/Latino (of any race)	19.8%	22.4%

Source: US Census ACS 5-Year Estimate 2019.

Note: Percentages may sum to greater than 100% because the U.S. Census' Hispanic/Latino ethnicity categorization may capture individuals of any race

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10.2.2.2 INCOME BY RACE AND ETHNICITY

Research has linked growing inequality of household income at the national scale to greater geographic segregation, fewer educational opportunities, and decreased upward mobility.[3,4]

The American Community Survey (ACS) illustrates household median income based on the distribution of the total number of households and families including those with no income. The median income is based on individuals 15 years and older with income. [5] According to Figure 10-2, householders who identify as Asian had the highest median household income of $146,214 in 2019 in Livermore. Householders who identify as White and Two or More Races followed with the next highest median household incomes of approximately $128,927 and $130,081, respectively. American Indian and Native Alaska householders had the lowest median household income at $71,932. Householders who identify as Some Other Race had the second to lowest household income of $80,526.

Figure 10-2   Livermore Median Household Income by Race/Ethnicity

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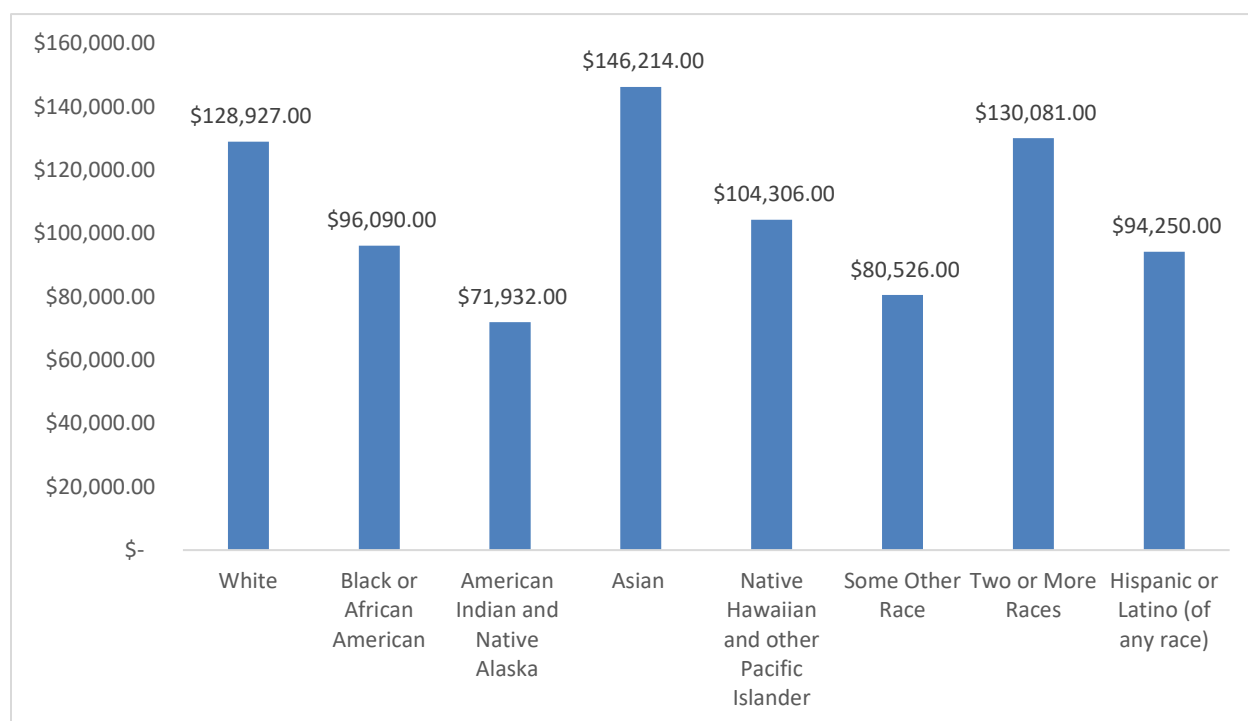
   [3] Reardon, S. F., & Bischoff, K. (2011). "Income Inequality and Income Segregation." American Journal of Sociology, 116(4), 1092–1153. https://doi.org/10.1086/657114

   [4] Neckerman, M. Kathryn., & Torche, Floencia. (2007). "Inequality: Causes and Consequences." Annual Review of Sociology, Vol 33:335-357, published August 11, 2007. https://doi.org/10.1146/annurev.soc.33.040406.131755

   [5] U.S. Census Bureau, American Community Survey), Median Household Income, accessed October 6, 2021. "Median Household Income." https://www.census.gov/quickfacts/fact/note/US/INC110219

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10.2.2.3   VULNERABLE POPULATIONS

Vulnerable populations are those who face a higher-than-average risk of negative health outcomes due to socio-economic circumstances, age, physical or mental health conditions, language barriers, or other issues. Vulnerability means different things in different contexts. For example, Livermore's recent Vulnerability Assessment completed as part of the Climate Action Plan identified vulnerable populations based on their sensitivity to climate change exposure.[6] By comparison, the CDC and the Agency for Toxic Substances and Disease Registry (ATSDR) use a Social Vulnerability Index to identify factors such as poverty, lack of access to transportation, and poor housing conditions that increase losses and suffering as a result of disasters.[7]

For the purposes of the General Plan Update, this report considered potentially vulnerable populations in Livermore to include children, seniors including seniors living alone, cost-burdened households, overcrowded households, homeless people, low-income households, households in poverty, people with disabilities, and people who speak limited English. Table 10-3 displays data on vulnerable populations within the community. Note that these categories are not mutually exclusive and may overlap; a single individual or a single household may be included in more than one category.

In addition to vulnerable households, there are populations within the City of Livermore that are considered vulnerable because their access to jobs is limited. For instance, unsheltered individuals, people with disabilities, non-English speakers, and seniors, may be willing to work, but could be considered unable to work due to physical, linguistic, or accessibility constraints. There are also populations who are not part of the labor market, such as children, who are dependent on others for support, and are also considered vulnerable populations due to public health concerns. Table 10-3 lists some of the vulnerable populations in Livermore. Figure 10-3 shows Census tracts with significant proportions of adults who describe themselves as speaking Spanish and having limited English ability.

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[6] Rincon Consultants, Inc., 2021. City of Livermore Climate Action Plan Update, Vulnerability Assessment, https://livermoreclimateaction.com/wp-content/uploads/2020/12/Livermore-Vulnerability-Analysis-Final-2020.pdf, accessed on September 23, 2021.

[7] https://www.atsdr.cdc.gov/placeandhealth/svi/index.html, accessed October 1, 2021.

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TABLE 10-3   VULNERABLE POPULATIONS IN LIVERMORE (2019)

	Count	
Population-based	91,436 people	100%
Youth (ages 0 to 17)[8]	21,132 people	23%
Seniors (age 65 and over)[9]	12,086 people	13%
Seniors Living Alone[10]	2,934 people	24%
Persons with disabilities[11]	7,535 people	8%
Homeless People[12]	264 people	0.3%
People in Poverty[13]	4,908 people	5%
Outdoor Workers[14]	593 people	-
Limited English Speakers[15]	2,257 people	2%

Source: All information provided in this table comes from a variety of sources including the Associated of Bay Area Governments/Metropolitan Transportation Commission Housing Need Data Packets. This data packet includes demographic, economic, and housing stock date for each Bay Area jurisdiction. The data in the Housing Needs Packet are sourced from data from the Census Bureau's American Community Survey (ACS) or U.S. Department of Housing and Urban Development's Comprehensive Housing Affordability Strategy (CHAS) data. These data points are an estimate and have an associated margin of error.

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[8] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Sex by Age for the City of Livermore." Table B01001(A-G).
https://data.census.gov/cedsci/table?q=b01001&g=1600000US0641992&tid=ACSDT5Y2019.B01001

[9] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Sex by Age for the City of Livermore." Table B01001(A-G).
https://data.census.gov/cedsci/table?q=b01001&g=1600000US0641992&tid=ACSDT5Y2019.B01001

[10] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Sex by Age for the City of Livermore." Table B01001(A-G).
https://data.census.gov/cedsci/table?q=b01001&g=1600000US0641992&tid=ACSDT5Y2019.B01001

[11] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Sex by Age by Disability Status for the City of Livermore". Table B18101.
https://data.census.gov/cedsci/table?q=B18101&g=1600000US0641992&tid=ACSDT5Y2019.B18101. The ACS asks about six disability types: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.

[12] Alameda County, *Alameda County Homeless Count & Survey Comprehensive Report 2019. http*s://everyonehome.org/wp-content/uploads/2019/07/2019_HIRDReport_Alameda_FinalDraft_8.15.19.pdf, accessed October 7, 2021.

[13] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Poverty Status in the Past 12 months for Livermore Residents." Table S1701.
https://data.census.gov/cedsci/table?q=Table%20S1701&g=1600000US0641992&tid=ACSST5Y2019.S1701. The Census uses a single set of poverty thresholds for the entire US. Thresholds vary by the size of the family and the age of the members. The poverty threshold for a single adult over 65 in 2019 was $12,261 in annual income, up to $56,895 for a family of nine or more.

[14] U.S. Department of Agriculture, Census of Farmworkers (2002, 2007, 2012, 2017), accessed September 30, 2021. Table 7: Hired Farm Labor; This data is from 2017. No URL is available.

[15] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Nativity by Language Spoken at Home by Ability to Speak English for the Livermore Population 5 years and over," Table B16005.
https://data.census.gov/cedsci/table?q=Table%20B16005&g=1600000US0641992&tid=ACSDT5Y2019.B16005

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Figure 10-3   Adults with Limited English Ability by Census Tract
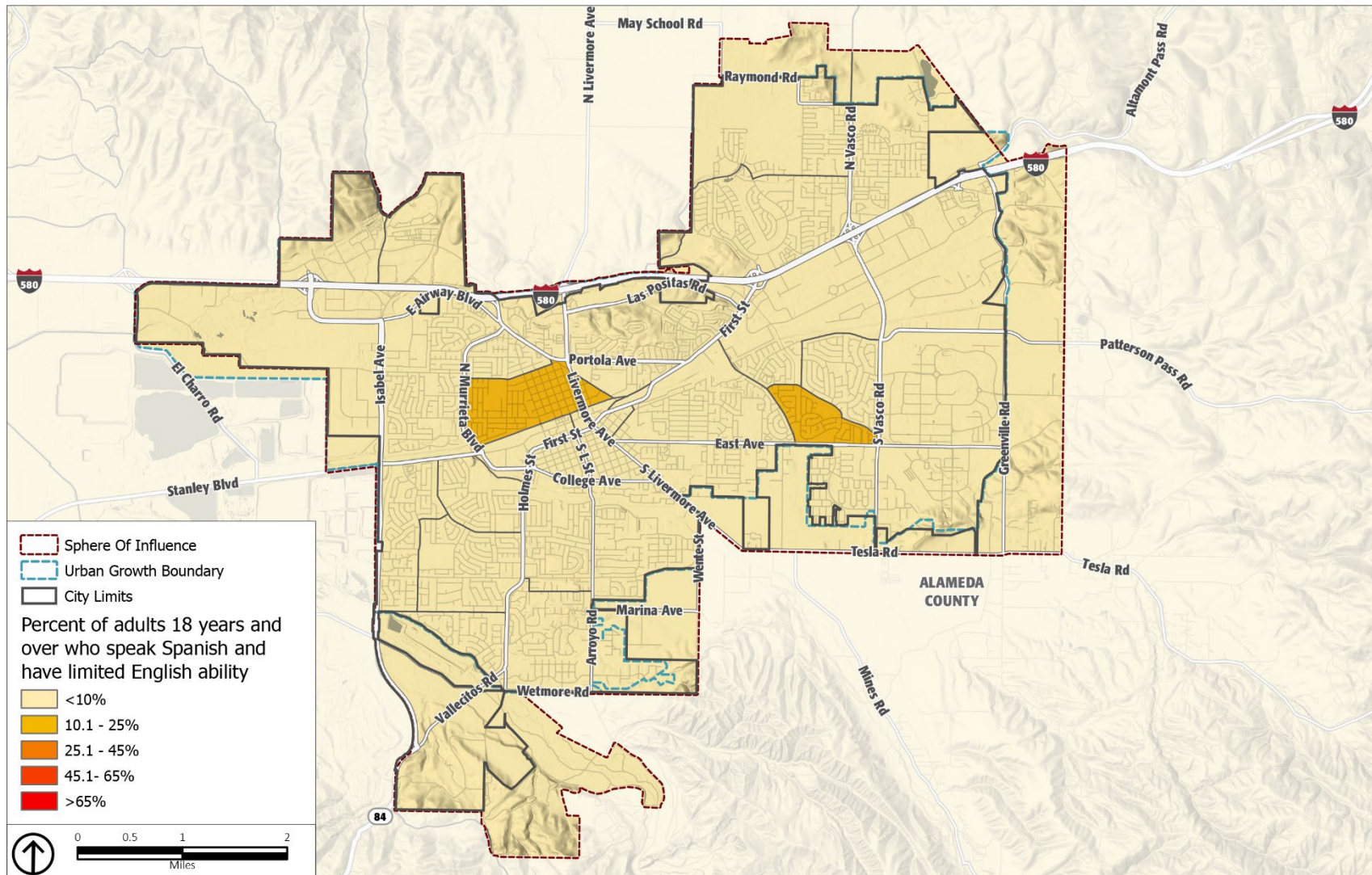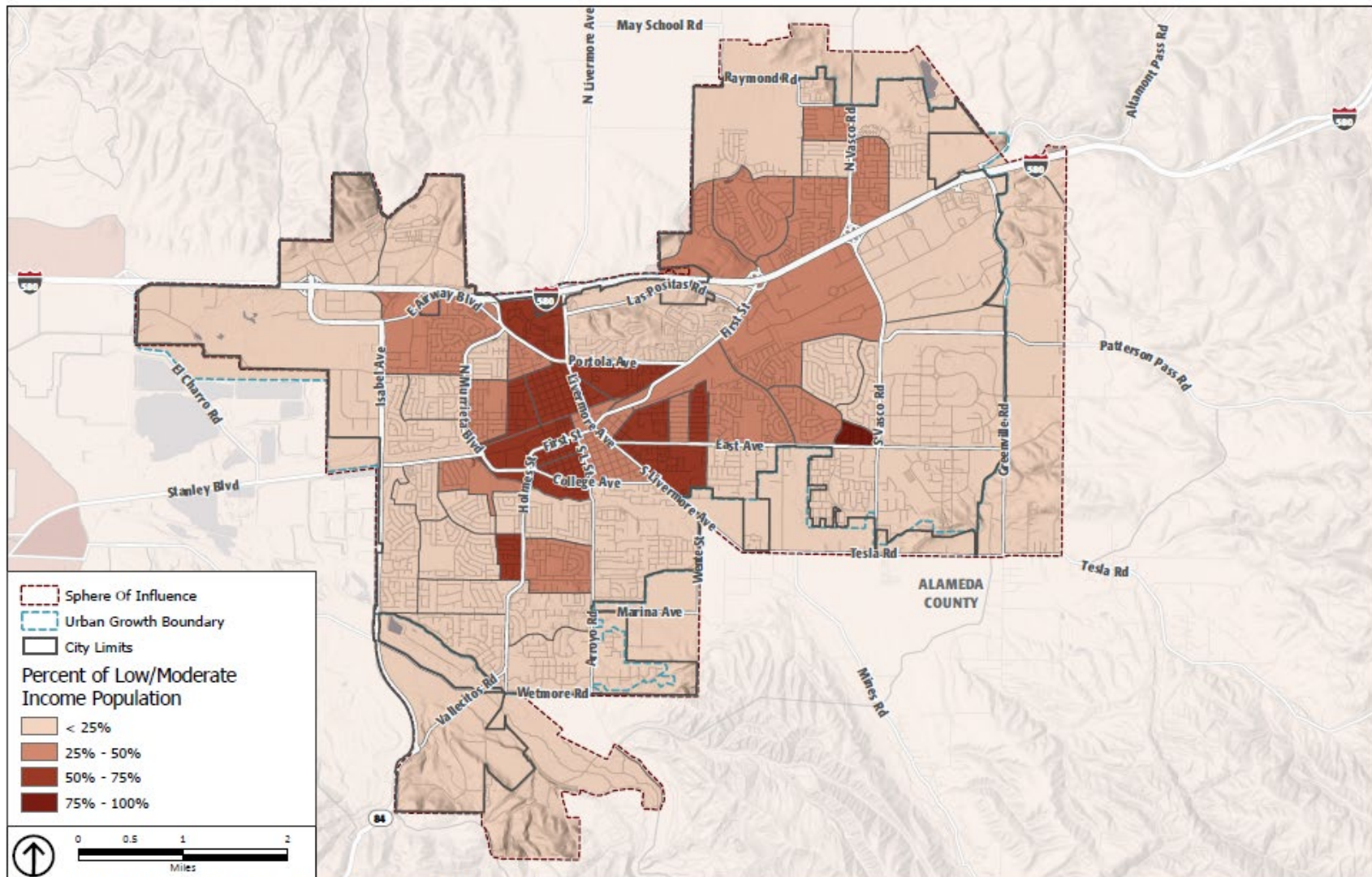
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10.2.3 HOUSING AND COMMUNITY HEALTH

HUD defines cost-burdened households as those whose monthly housing costs exceed 30 percent of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50 percent of monthly income. High housing cost burden reduces remaining household income available for short-term and long-term expenses and financial goals, increasing this population's vulnerability risk. Low-income households are more likely to be cost-burdened. Table 10-4 lists some categories of vulnerable households in Livermore, and Figure 10-4 illustrates Census block groups with varying percentages of low- and moderate-income households. Figure 10-5 shows Census tracts where high proportions of renters are paying more than 30 percent of their income in rent.
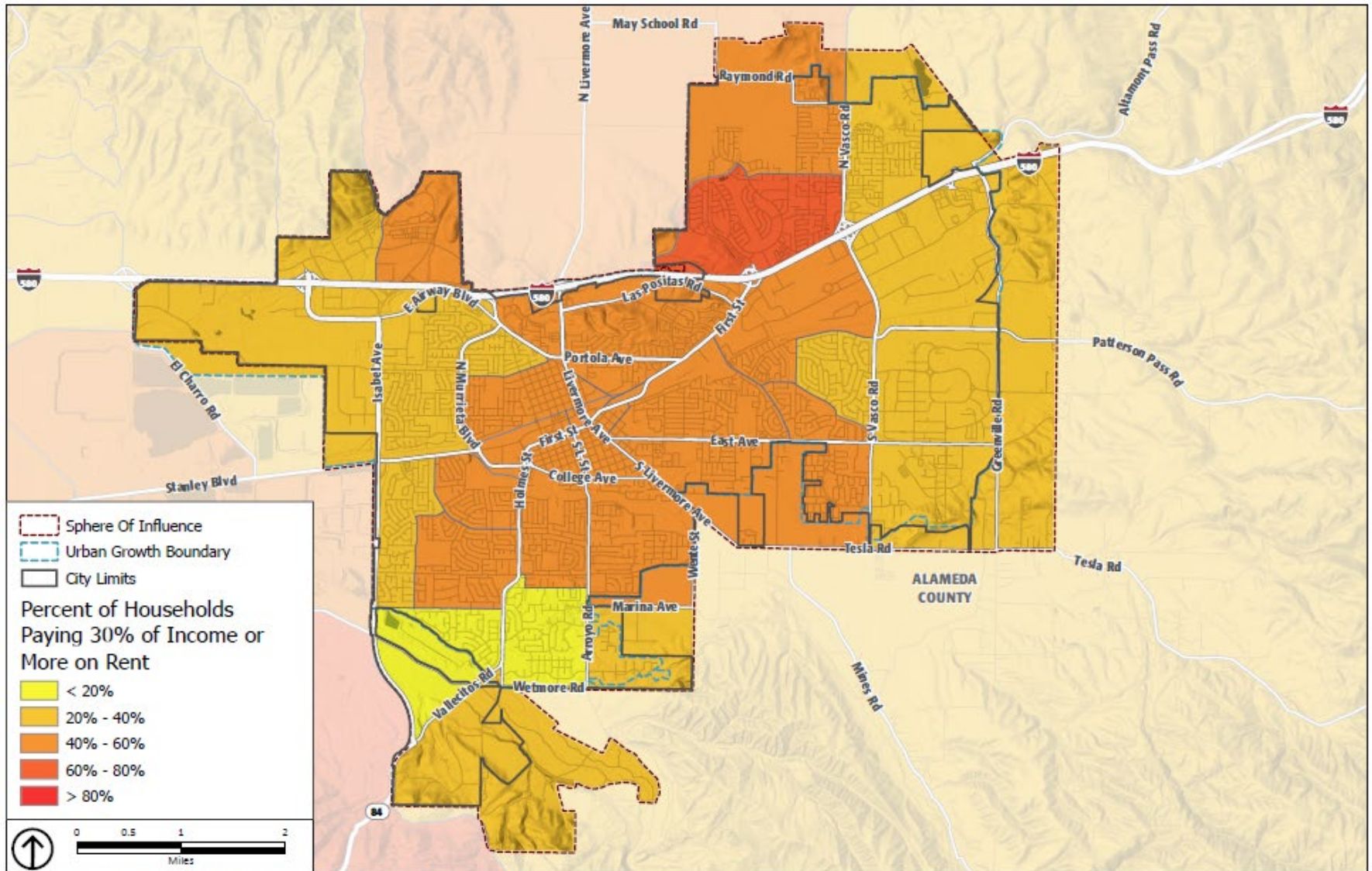
Figure 10-4   Percentage of Low-Income Households by Census Block Group

Source: HUD, 2019; CalEPA, 2021; City of Livermore, 2021; Esri, 2021.

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Figure 10-5   Rent-Burdened Households

Source: ACS, 2019; CalEPA, 2021; City of Livermore, 2021; Esri, 2021.

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Approximately 8 percent of occupied housing units in Livermore are overcrowded, meaning they have an average of more than one occupant per room. Overcrowding increases health and safety concerns and stresses the condition of the housing stock and infrastructure.[16]

According to a 2019 San Francisco Public Health Report, the health effects of housing insecurity has been well documented. [17] A 2011 study conducted by the Center for Disease and Control Prevention (CDC) found that housing insecure respondents were twice as likely as housing secured individual to report poor or fair health status or delay doctor visits because of costs.[18] As a result, housing insecure individuals may have untreated and unreported health issues. Delayed medical care can result in more expensive medical expenses than preventive medical treatment, perpetuating a cycle of medical debt for an already resource limited and vulnerable population.[19]

Housing insecurity can have significant long-term effects on the health of individuals. For families, housing insecurity causes toxic stress, which may derail normal child growth and development and make children susceptible to poor health outcomes. Moreover, housing insecurity of pregnant woman is linked to preterm birth, which may influence the lifelong health outcomes for the child.[20]

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[16] Housing and Community Development, accessed September 30, 2021. "Overpayment and Overcrowding." https://www.hcd.ca.gov/community-development/building-blocks/housing-needs/overpayment-overcrowding.shtml

[17] San Francisco Public Health Department, February 2019., "San Francisco Department of Public Health Brief: Health Impacts of Family Housing Insecurity." https://www.sfdph.org/dph/files/EHSdocs/ehsCEHPdocs/Housing_Insecurity_SFDPH_Report.pdf

[18] Stahre M, VanEenwyk J, Siegel P, Njai R. Housing Insecurity and the Association With Health Outcomes and Unhealthy Behaviors, Washington State, 2011. Prev Chronic Dis 2015;12:140511. DOI: http://dx.doi.org/10.5888/pcd12.140511external icon.

[19] Institute of Medicine (US) Roundtable on Evidence-Based Medicine; Yong PL, Saunders RS, Olsen LA, editors. The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary. Washington (DC): National Academies Press (US); 2010. 6, Missed Prevention Opportunities. Available from: https://www.ncbi.nlm.nih.gov/books/NBK53914/

[20] San Francisco Public Health Department, February 2019., "San Francisco Department of Public Health Brief: Health Impacts of Family Housing Insecurity." https://www.sfdph.org/dph/files/EHSdocs/ehsCEHPdocs/Housing_Insecurity_SFDPH_Report.pdf

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TABLE 10-4   VULNERABLE HOUSEHOLDS IN LIVERMORE (2019)

	Count	
Total households[21]	31,360	100%
Cost-Burdened Households[22]	10,002	32%
Overcrowded Households[23]	2,069	7%
Extremely Low Income and Very Low-Income Households[24]	5,387	17%

Source: All information provided in this table comes from a variety of sources including the Associated of Bay Area Governments/Metropolitan Transportation Commission Housing Need Data Packets. This data packet includes demographic, economic, and housing stock date for each Bay Area jurisdiction. The data in the Housing Needs Packet are sourced from data from the Census Bureau's American Community Survey (ACS) or U.S. Department of Housing and Urban Development's Comprehensive Housing Affordability Strategy (CHAS) data. These data points are an estimate and have an associated margin of error.

10.2.3.1   HOUSING VOUCHERS

The U.S. Department of Housing and Urban Development's (HUD) Housing Choice Voucher Program assists very low-income families, the elderly, and the disabled in obtaining decent, safe, and sanitary housing in the private market. Public Housing Authorities (PHAs) receive federal funds to administer the voucher program, and housing subsidies are paid to the landlord directly by the PHA on behalf of the participating family. The voucher recipient remains responsible for paying any difference that exists between the actual rent charged by the landlord and the amount subsidized by the program. Voucher recipients are responsible for finding suitable housing units, where the owner agrees to rent under the program. Participants have agency in the selection of the housing unit that fits their need as long the requirements of the program are met.

There are four census tracts in the City of Livermore, where 5 percent to 15 percent of the Renter Occupied Housing Units use a housing choice voucher. Two census tracts are divided along S. Livermore Ave near Robertson Park and Buena Vista Ave. The other two census tracts are bounded by Portola Ave., N. Murrieta Blvd. the Union Pacific Railroad tracks, and Junction Ave- the tracts are separated by Pine St. There is one census tract, North of Highway 580 and close in proximity to the North Livermore Neighborhood Park, where 16 percent of the Renter Occupied Housing Units use a housing choice voucher.

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[21] U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), accessed September 30, 2021. "Housing Tenure in Livermore," Table B25003.
https://data.census.gov/cedsci/table?q=b25003&g=1600000US0641992&tid=ACSDT5Y2019.B25003

[22] U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release

[23] U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release

[24] U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release

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10.2.4 COMMUNITY HEALTH STATISTICS

This section provides a snapshot illustration of the health and wellbeing of residents in the City of Livermore. Having baseline data points on the health statistics on Livermore residents will help guide how the General Plan Update can help mitigate and minimize health disparities. Most of the data in this section has been collected and organized by the County of Alameda via healthyalemdacounty.org.

10.2.4.1 DIABETES

Diabetes is a leading cause of death in the United States. According to the Centers for Disease Control and Prevention (CDC), more than 25 million people have diabetes, including both diagnosed and undiagnosed cases. This disease can have a harmful effect on most of the organ systems in the human body; it is a frequent cause of end-stage renal disease, non-traumatic lower-extremity amputation, and a leading cause of blindness among working age adults. Persons with diabetes are also at increased risk for ischemic heart disease, neuropathy, and stroke. Diabetes disproportionately affects minority populations and the elderly, and its incidence is likely to increase as minority populations grow and the U.S. population ages.

According to the California Health Interview (Neighborhood Edition), 7.0 percent of Livermore residents have ever been diagnosed with diabetes. Compared to Alameda County's 8.6 percent, Livermore residents in regard to the percentage of adults with diabetes, have a lower percentage of residents who have been diagnosed with diabetes.

10.2.4.2 ASTHMA

Asthma is a condition in which a person's air passages become inflamed, and the narrowing of the respiratory passages makes it difficult to breathe. Asthma is one of the most common long-term diseases of children, but it also affects millions of adults nationwide. Symptoms can include tightness in the chest, coughing, and wheezing. These symptoms are often brought on by exposure to inhaled allergens, such as dust, pollen, mold, cigarette smoke, and animal dander, or by exertion and stress. Reducing exposure to poor housing conditions, traffic pollution, secondhand smoke and other factors impacting air quality can help prevent asthma and asthma attacks. There is no cure for asthma, but for most people, the symptoms can be managed through a combination of long-term medication prevention strategies and short-term quick relievers. In some cases, however, asthma symptoms are severe enough to warrant hospitalization, and can result in death.

According to the California Health Interview Survey (Neighborhood Edition), 14.3 percent of Livermore residents (in comparison to 13.9 percent of the rest of Alameda County residents) have been told by a health professional that they have ever had asthma. 8.9 percent of Livermore residents have been told that they currently have asthma. In comparison, the rest of Alameda County averages a current asthma value of 8.3, which is lower and better than the city of Livermore.

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10.2.4.3   OBESITY

The percentage of obese adults is an indicator of the overall health and lifestyle of a community. Obesity increases the risk of many diseases and health conditions, including heart disease, type 2 diabetes, cancer, hypertension, stroke, liver and gallbladder disease, respiratory problems, and osteoarthritis. Losing weight and maintaining a healthy weight help to prevent and control these diseases. Being obese also carries significant economic costs due to increased healthcare spending and lost earnings.

Healthy Alameda measures the percentage of adults aged 18 and older who are obese according to the Body Mass Index (BMI). The BMI is calculated by taking a person's weight and dividing it by their heigh squared in metric units. A BMI of equal to and/more than 30 is considered obese. According to the California Health Interview Survey (Neighborhood Edition), 25.9 percent of Livermore adults are estimated to be obese. In comparison, 21.5 percent of Alameda County residents are considered obese. In 2015-2016, the City of Livermore met the National Healthy People 2020 target of a population with less than 30.5 percent of its residents that are considered obese.

10.2.4.4   CHRONIC DISEASES

Cancer

The National Cancer Institute (NCI) defines cancer as a term used to describe diseases in which abnormal cells divide without control and are able to invade other tissues. According to the NCI there are over 100 different types of cancer, but breast, colon, lung, pancreatic, prostate, and rectal cancer lead to the greatest number of annual deaths. Risk factors of cancer include but are not limited to: age, alcohol use, tobacco use, a poor diet, certain hormones, and sun exposure. Although some of these risk factors cannot be avoided--such as age--limiting exposure to avoidable risk factors may lower risk of developing certain cancers.

According to public health data compiled by the Centers for Disease and Control (CDC) and the Robert Wood Johnson Foundation and made available through the PLACES data portal,[25] 6.1 percent of Livermore adults aged over 18 and older have been told by a health professional that they have any type of cancer, except skin cancer. Livermore is in the top 50 percent of California cities. Cities with 6.8 percent or lower of cancer cases are in the top 50 percent. In comparison, cities in the worst 25 percent have 8.2 percent or more of cancer cases.

Heart Disease

Heart disease is a term that encompasses a variety of different diseases affecting the heart. Not only is heart disease one of the leading causes of death in women, but it is the leading cause of death in the United States overall. The most common type is coronary artery disease, which can cause heart attack, angina, heart failure, and arrhythmias. Coronary artery disease occurs when plaque builds up in the arteries that supply blood to the heart and the arteries narrow (atherosclerosis). There are many

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[25] https://www.cdc.gov/places/index.html

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modifiable risk factors for atherosclerosis including tobacco smoking, obesity, sedentary lifestyle, and high levels of low-density lipoprotein in blood serum.

According to the California Health Survey conducted from 2017 to 2018, 6.2 percent of Livermore adults have heart disease. Alameda County has a median value of 5.5 percentage, with the highest value of 7.9 percent (Piedmont) and the lowest value of 4.7 (Emeryville).

10.2.5 HEALTH CARE ACCESS

Access to appropriate medical care and preventative health care can have a dramatic effect on health outcomes. People who have reliable and timely access to health care are more likely to be able to prevent disease or detect and address disease during earlier, treatable stages. Delays in necessary care can increase the risk of complications.

The California Health Interview Survey asked adults aged 18 and over about having delayed or not received other medical care they felt they needed. According to the California Health Interview Survey (Neighborhood Edition), 17.6 percent of Livermore residents had delayed or difficulty obtaining care. In comparison, Alameda County had a similar value, where 16.8 percent of residents felt that had delayed or difficulty obtaining care. The measurement period of this study was from 2017-2018, prior to the coronavirus pandemic.

10.2.6 ACTIVE TRANSPORTATION OPTIONS

Active Transportation refers to all human-powered modes of transportation, from walking and bicycling to scootering, skateboarding, or rollerblading. These active modes of transportation are not only fun, affordable, and environmentally friendly, they support public health by incorporating physical activity into daily life. The ATP described in Chapter 7, Circulation, contains extensive information about the existing conditions of Livermore's bicycle and pedestrian facilities.

10.2.6.1 ROADWAY NETWORK AND MAJOR BARRIERS

The majority of the city is comprised of suburban streets with cul-de-sacs and limited connection between neighborhoods, while Downtown Livermore generally follows a traditional grid network. As a result, the few corridors that provide cross-town connectivity face a large burden to accommodate and connect all modes of transportation. Additionally, the Union Pacific Railroad tracks bisect the city and create a barrier to north-south travel for multi-modal transportation since many streets either do not cross the railroad tracks or cross at grade, meaning people on foot or bikes must navigate an uncomfortable and uneven crossing.

I-580 separates the northwest and northeast neighborhoods from the rest of the city. There are eight existing crossings of I-580 in Livermore. All of the crossings allow bicycle and pedestrian travel, but many of them are not ideal to accommodate a comfortable experience for pedestrians and bicyclists.

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Lastly, several arroyos are intertwined into the landscape of Livermore. While the arroyos play valuable roles as habitat, waterways, and open space, they can both function as part of the City's existing trail network and sometimes interrupt the connectivity of walking and biking routes.

10.2.6.2   BICYCLE NETWORK

There are 40 miles of Class I Shared Use Paths (separated paths) and 66 miles of Class II Bicycle Lanes (lanes painted on the street). In addition to Class I and Class II conventional bicycle lanes, there are more additional classes of bikeways designated by Caltrans and Alameda CTC that do not yet exist in Livermore but were considered and recommended where necessary in development of the active transportation plan. Additionally bicycle infrastructure such as bike boxes and two-stage turn boxes have been included in this plan. See Figure 10-6 for an example of a shared use path in Livermore and Figure 10-7 for a Class II bicycle lane in Livermore.

Figure 10-6   Example of Class I Shared Use Path in Livermore

Source: Livermore Active Transportation Plan, 2018.

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Figure 10-7   Example of Existing Class II Bike Lane in Livermore.

Source: Livermore Active Transportation Plan, 2018.

10.2.6.3   PEDESTRIAN NETWORK

The pedestrian network includes sidewalks, pathways, crosswalks, curb ramps, crossing enhancements, and amenities like benches and lighting. Sidewalks, a subset of the pedestrian network, play an important role in allowing people to safely and freely move through the City. Sidewalks in Livermore vary in width from five to ten feet wide, depending on the adjacent land use. Livermore has approximately 566 miles of sidewalks, covering 93 percent of the street network. There are 44 miles of roadways that have sidewalk on only one side, and 32 miles that lack sidewalks entirely.

Curb ramps on sidewalks help pedestrians with mobility impairments, those using assistive devices, and children transition from sidewalk to cross walk. Curb ramps also support pedestrians with strollers and children riding scooters or skateboards on the sidewalks. Livermore has approximately 8,000 curb ramps; 28 percent of ramps comply with current Americans with Disabilities Act standards, 59 percent of the existing curb ramps require an update, and 13 percent of the existing curb ramps are located in areas where a curb ramp would traditionally be located but has not been installed.

10.2.6.4   TRAIL NETWORK

The existing and proposed trail network outlined in the ATP create a separated and comfortable access to community facilities, schools, and transit. Livermore has approximately 40 miles of Class I paved shared paths designed for bicycling, walking, and horseback riding. The existing trail network is partly developed throughout Livermore, along the railroad tracks, linkages across I-580, and along the arroyos. The trail network provides recreational opportunities and connection to neighborhood and regional parks. South

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Livermore Valley contains separate unpaved paths for equestrians, although equestrians are allowed on all trails.

10.2.7 ACCESS TO HEALTHY FOODS

The accessibility, availability, and affordability of healthy and varied food options in the community increase the likelihood that residents will have a balanced and nutritious diet. A diet composed of nutritious foods, in combination with an active lifestyle, can reduce the incidence of heart disease, cancer, and diabetes, and is essential to maintain a healthy body weight and prevent obesity. Low-income and underserved areas often have limited numbers of stores that sell healthy foods. People living farther away from grocery stores are less likely to access healthy food options on a regular basis and thus more likely to consume foods which are readily available at convenience stores and fast-food outlets.

The United States Department of Agriculture (USDA) has created a Food Access Research Atlas to measure both income and food access in Census tracts nationwide. Census tracts are considered to be low income if the tract's poverty rate is 20 percent or greater or if the median household income is less than or equal to 80 percent of area median household income. Census tracts are considered to have low access to food stores if at least 500 people and at least 33 percent of people are a half-mile or more from the nearest food store. "Food stores" are considered to be supermarkets, supercenters, or large grocery stores. These types of stores may not be the only outlets where healthy food is available, but they are the easiest and most accurate to track and measure, and over 84 percent of Supplemental Nutrition Assistance Program (SNAP) redemptions were at these three types of stores in 2019.[26]

In Livermore, there is one Census tracts identified as both low-income and low access by the Food Access Research Atlas. The roughly triangular area that includes Arroyo Seco Elementary, bounded by Mines Road, East Avenue, and Arroyo Seco, is identified as over one mile from food stores, as shown in Figure 10-8.

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[26] USDA Economic Research Service, "Introduction to the Food Access Research Atlas." https://www.ers.usda.gov/data-products/food-access-research-atlas. Accessed October 4, 2021.

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Figure 10-8   Food Access Research Atlas Low Income Low Access Census Tracts
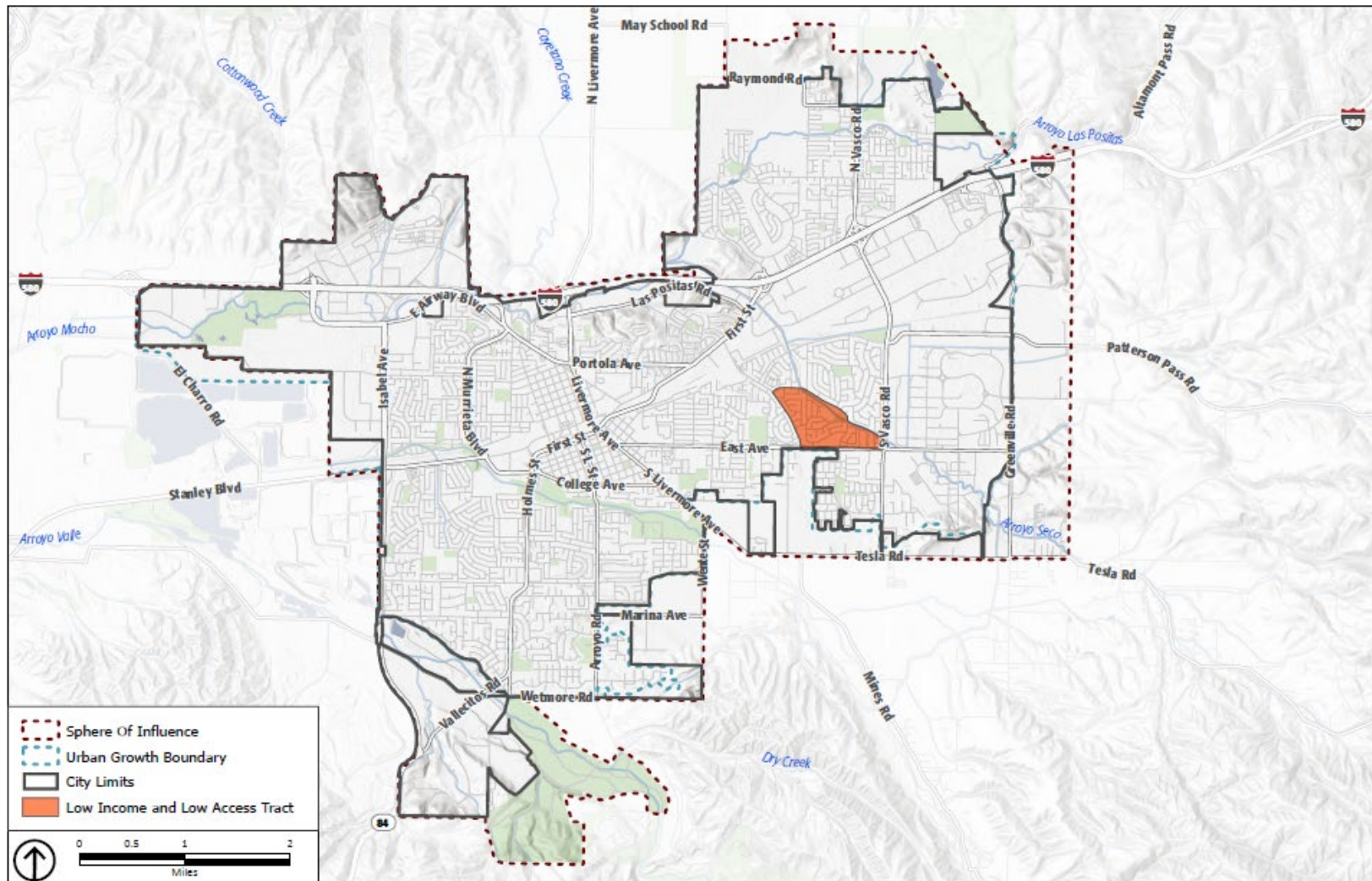
Source: USDA, 2021; City of Livermore, 2021; Esri, 2021.

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10.3 IMPLICATIONS FOR THE GENERAL PLAN UPDATE

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

- Conducting more detailed investigation into disparities in specific pollution burdens, socioeconomic factors, and health outcomes in Livermore to determine whether there are specific areas that should be considered "disadvantaged communities" and receive focused policy attention in the General Plan.

- Reducing health risks in any identified disadvantaged communities by reducing pollution exposure and by identifying and prioritizing relevant improvements to public services, community amenities, food access, safe and sanitary homes, and physical activity, based on the needs and priorities expressed by residents of these communities.

- Addressing community engagement in the governmental decision-making processes.

- Improving housing affordability and housing stability, particularly for vulnerable populations.

- Addressing access to health care and medical facilities in Livermore.

- Continuing to improve options for biking and walking safely.

- Exploring ways to increase access to healthy food options in neighborhoods that are both low-income and over a mile from food stores.