# Livermore Climate Action Plan Update

## Draft Initial Study – Negative Declaration

*prepared for*

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# Initial Study

## Proposed Plan Title

Livermore Climate Action Plan (CAP) Update

## Lead Agency/Plan Sponsor and Contact

### Lead Agency/Plan Sponsor

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## Plan Location and Physical Setting

The CAP Update applies to all areas and plans/projects within the City of Livermore limits. Figure 1 shows the regional location, and Figure 2 shows the plan location. The plan location includes all of Livermore's incorporated lands.

### Regional Location and Setting

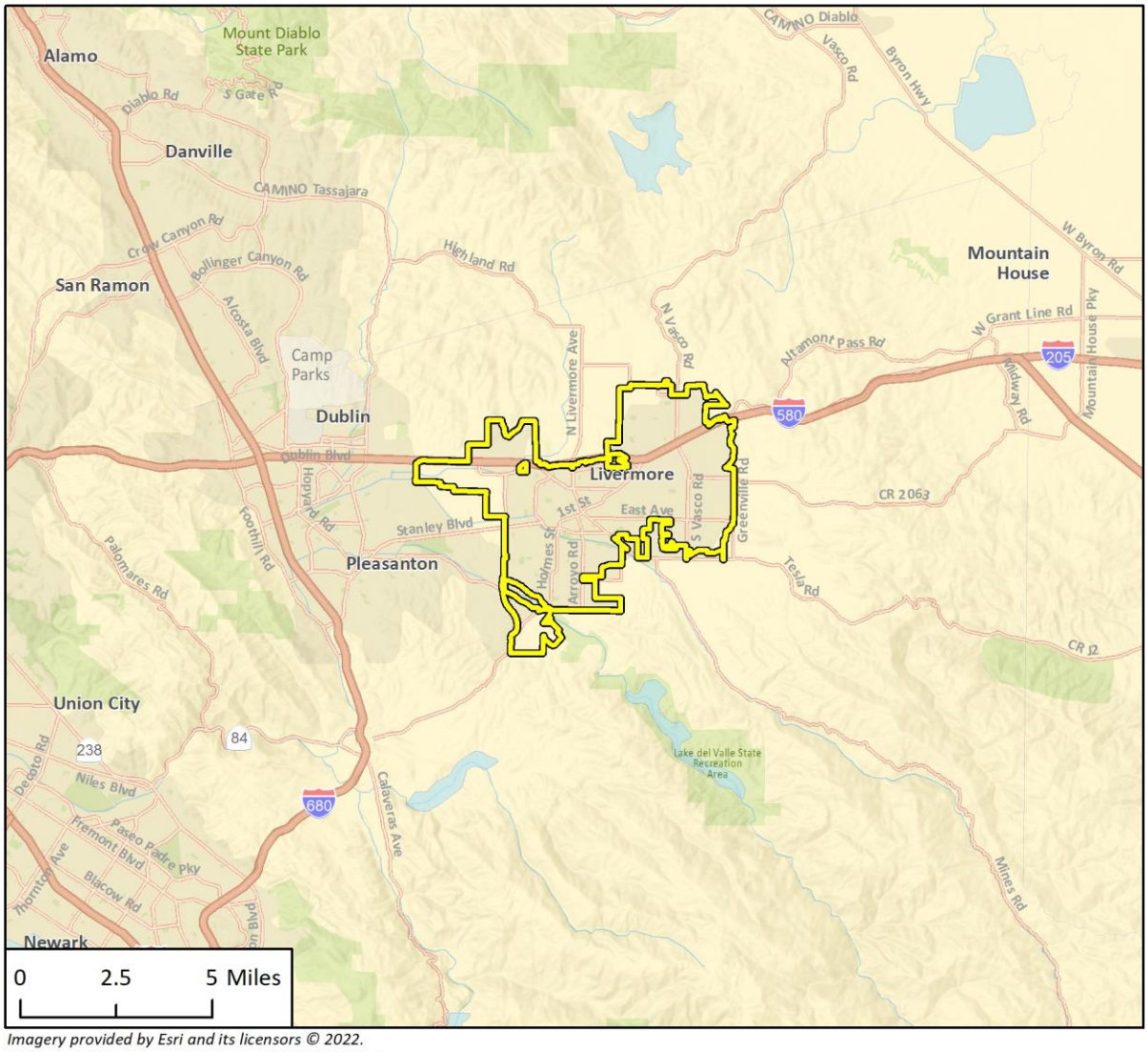
The City of Livermore is approximately 26 square miles within Alameda County in the San Francisco Bay Area.[1] Livermore lies within the Tri-Valley area, which also includes the cities of Pleasanton, Dublin, and San Ramon, the Town of Dublin, and unincorporated portions of Alameda and Contra Costa Counties. The City is generally bordered by the east-west Interstate 580 (I-580) thoroughfare and unincorporated areas of Alameda County to the north, unincorporated Alameda County to the east and south, and the City of Pleasanton to the west.

Regional vehicular access to Livermore is primarily provided by I-580, which connects to I-680 to the west. Livermore is also served by public transit facilities, including the Altamont Corridor Express (ACE) train and Livermore Amador Valley Transit Authority Wheels bus routes.[2] There are two ACE stations in Livermore, the Vasco Road station at 575 Vasco Road and the Livermore station in the Livermore Transit Center at 2500 Railroad Avenue.

[1] Livermore, City of. 2022. About Livermore. Available: <https://www.cityoflivermore.net/our-community/about-livermore>. Accessed April 8, 2022.

[2] Livermore, City of. 2022. Transportation. Available: <https://www.cityoflivermore.net/government/innovation-economic-development/starting-and-growing-your-business/transportation>. Accessed April 8, 2022.

## Figure 1 Regional Location




*Imagery provided by Esri and its licensors © 2022. Altamont & Livermore quadrangles. T02S R01E S36 & T02S R02E S25-28,31,33-36 & T03S R01E S01-03,10-12 & T03S R02E S01-22,27-32.*

City of Livermore

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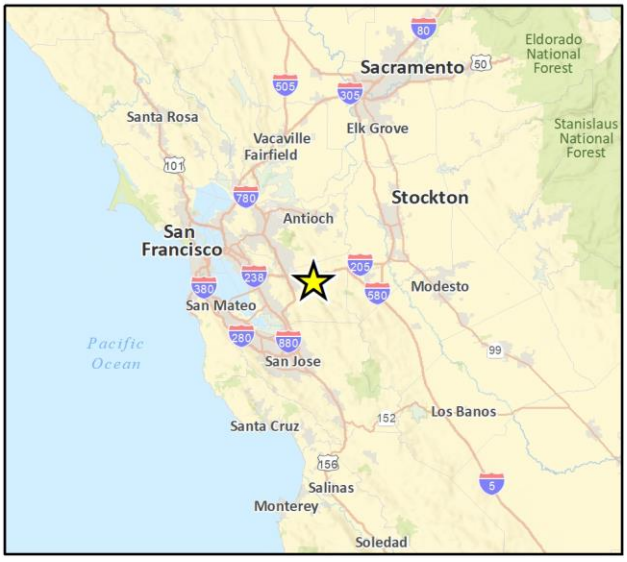
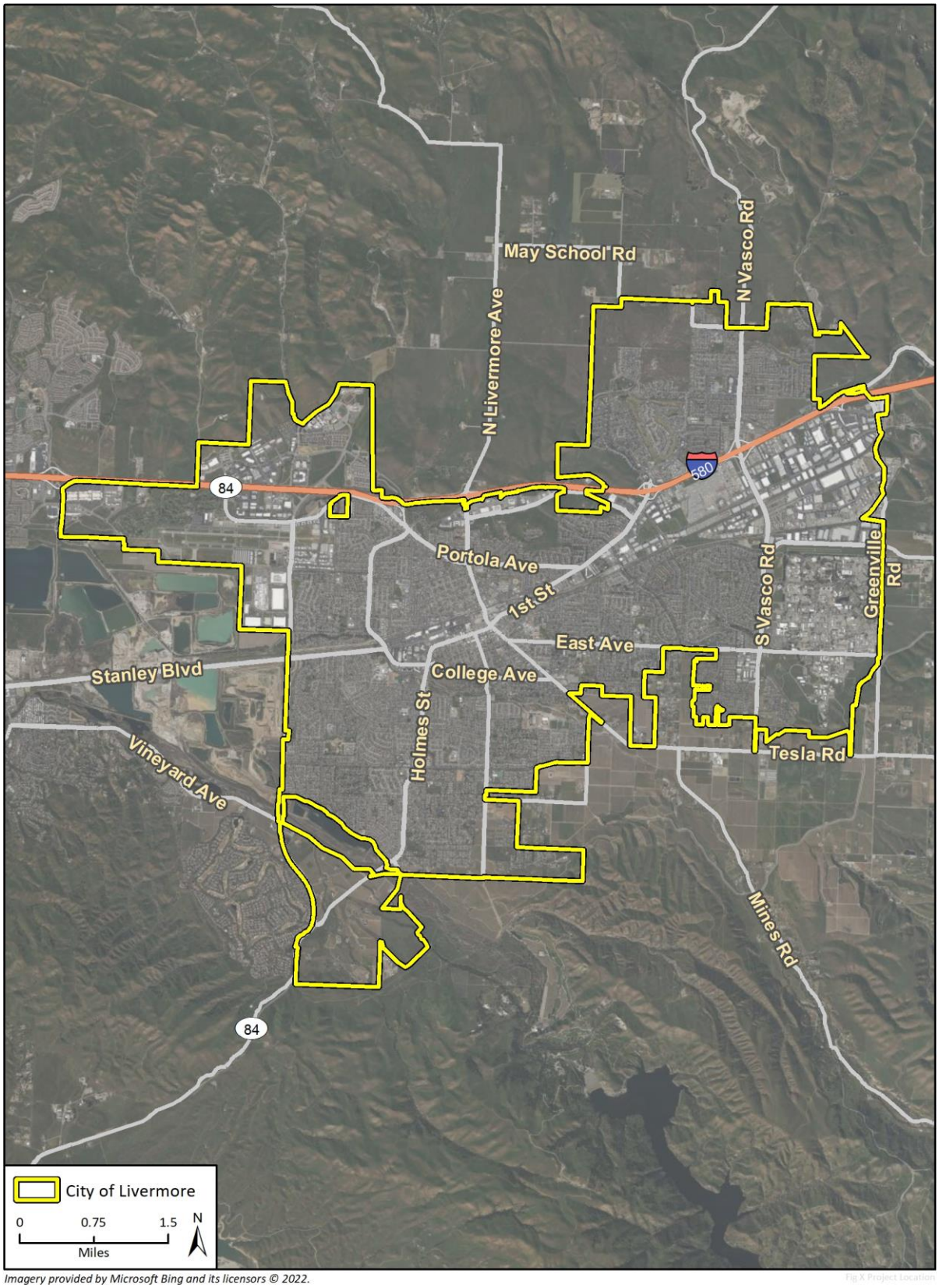


**Figure 2 Plan Location**




*Imagery provided by Microsoft Bing and its licensors © 2022.*

Livermore is also served by the following Wheels bus routes:

- Route 10R connecting the Livermore Transit Center to downtown Pleasanton and the East Dublin/Pleasanton Bay Area Rapid Transit (BART) Station.
- Route 11 connecting the Livermore Transit Center to the Vasco Road ACE Station.
- Route 14 connecting the East Dublin/Pleasanton BART Station to the Livermore Transit Center.
- Route 15 connecting the Livermore Transit Center to Las Positas, Wal-Mart, and Springtown.
- Route 20X connecting East Dublin/Pleasanton BART Station to the Lawrence Livermore National Laboratory and the Livermore Transit Center.
- Route 30R connecting the West Dublin BART and East Dublin/Pleasanton BART Stations, Lawrence Livermore National Laboratory, Livermore Transit Center, Las Positas College, and the Dublin Civic Center.
- Route 580X connecting East Dublin/Pleasanton BART Station and Livermore Transit Center via I-58 and North Livermore Avenue.[3]

The city is also accessible by the Livermore Municipal Airport, located in the western portion of Livermore and San Francisco International Airport, which is located approximately 45 driving miles to the west of Livermore.

## Local Setting

Livermore is the sixth most populous city in Alameda County, with a population of 87,955 according to the 2020 U.S. Census.[4] Low-density residential uses comprise the largest portion of existing land uses within Livermore. In addition, Livermore contains areas of multifamily residential, retail, and office uses along major transportation corridors, as well as in the downtown area. Industrial uses are located primarily on the eastern side of Livermore near I-580. Additional industrial uses are found in the western part of Livermore near the Livermore Municipal Airport. Neighborhood and community parks are interspersed throughout Livermore, with larger open space areas near the fringes of Livermore such as Brushy Peak Regional Preserve, Sycamore Grove Park, and Robertson Park.[5] The city supports a diverse range of industries, including agriculture, science and technology, tourism, and a variety of retail, office, and commerce.[6]

Livermore is located within an alluvial valley. The city is located approximately 350 feet above mean sea level, and its topography is generally flat with elevations increasing to 500 to 1,200 feet above mean sea level in the hills at the northern, eastern, and southern fringes of Livermore.[7] The city is characterized by a Mediterranean climate with dry summers and wet winters. The warmest months of the year in Livermore are July and August, and the coldest months of the year are December and January. The annual average daily high temperature is 73.1 degrees Fahrenheit (°F), while the

[3] Amador Valley Transit Authority. Wheels System Map. Available: <https://www.wheelsbus.com/wp-content/uploads/2018/02/93025_SystemMap_1000_proofLR.pdf>. Accessed April 8, 2022.

[4] U.S. Census Bureau. Quick Facts: Livermore City, California. Available: <https://www.census.gov/quickfacts/fact/table/livermorecitycalifornia/PST045221 >. Accessed April 8, 2022.

[5] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 8, 2022.

[6] Livermore, City of. 2003. General Plan Economic Development and Fiscal Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1369/637643624644930000>. Accessed April 8, 2022.

[7] Livermore, City of. 2003. Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7287/637587704102770000>. Accessed April 12, 2022.

annual average daily minimum temperature is 47.7°F. Average monthly rainfall measured in the local area since 1977 varies from to 0 inch in July to 2.81 inches in February.[8]

# Existing Sustainability Setting

## Livermore Sustainability and Greenhouse Gas Emissions Reduction Efforts

The City has actively implemented a variety of environmental programs since 2009 contributing to greenhouse gas (GHG) emissions reductions. The following is a listing of the City's primary sustainable and climate protection programs:

- General Plan Climate Change Element adopted (2009)
- Polystyrene Ban Ordinance adopted (2011)
- Climate Action Plan adopted (2012)
- Tri-Valley Local Hazard Mitigation Plan prepared (2018)
- Active Transportation Plan adopted (2018)
- East Bay Community Energy (EBCE) Community Choice Aggregation authorized (2018)
- Livermore Municipal Code (LMC) Chapter 15.26 adopts the 2019 California Green Building Standards Code (2019)
- Green Infrastructure Plan adopted (2019)
- 2020 Urban Water Management Plan completed (2021)

## Regional Sustainability and GHG Emissions Reduction Efforts

In coordination with Alameda County, the State of California, and the federal government, the City of Livermore has committed to implementing regional and State policies related to GHG emissions reduction. As follows is a summary of the regional GHG emissions reduction efforts, which the Livermore CAP Update is intended to be consistent with or exceed.

### *Plan Bay Area: Strategy for a Sustainable Region*

The Metropolitan Transportation Commission (MTC) adopted the Plan Bay Area 2050 in October 2021, which identifies how the Bay Area will meet its GHG emission reduction targets. Plan Bay Area is also considered the Association of Bay Area Governments (ABAG)/MTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). In accordance with SB 743, the Plan Bay Area included elements designed to encourage the type of land-use development to meet three primary objectives. First, Roadway Level of Service (LOS) could not be considered an environmental impact under the California Environmental Quality Act (CEQA). Second, it introduced changes to Vehicle Miles Traveled (VMT) per capita as a determinant of environmental impact. Third, the use of VMT as an environmental impact in CEQA is considered a mechanism for achieving State and regional GHG reduction goals.

### *Bay Area Air Quality Management District CEQA GHG Guidelines and Thresholds*

On April 20, 2022, the Bay Area Air Quality Management District (BAAQMD) adopted the CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans and is in the process of updating their 2017 CEQA Guidelines (BAAQMD 2022a). The CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans include

[8] Iowa State University. 2022. Iowa Environmental Mesonet: Livermore Station. Available: <https://mesonet.agron.iastate.edu/sites/monthlysum.php?station=LVK&network=CA_ASOS>. Accessed April 12, 2022.

requirements for projects and plans in jurisdictions that do not have an adopted local GHG reduction strategy that meets the criteria of CEQA Guidelines Section 15183(b). In addition, according to the BAAQMD, if a project is consistent with a local GHG reduction strategy, then it can be presumed that the project will not have significant GHG impacts (BAAQMD 2022b). This approach is consistent with CEQA Guidelines, Section 15183.5:

> Lead agencies may analyze and mitigate the significant impacts of GHG emissions at a programmatic level, such as…a plan to reduce GHG emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an [Environmental Impact Report] containing a programmatic analysis of GHG emissions.

### *Alameda County Countywide Transportation Plan*

In 2020, The Alameda County Transportation Commission adopted the Countywide Transportation Plan (CTP) to provide the County with a long-range plan for establishing the vision and priorities for transportation over a 30-year planning horizon. The CTP seeks to enhance and expand public transit, bicycle facilities, and pedestrian access within the County in order to improve mobility and access for all segments of the population and promote public health, environmental sustainability, and climate resiliency. The plan identifies 93 projects across the county including greenways and trails, transit capacity improvements, sea level rise adaptation, and multimodal corridors. Priority projects identified for Livermore include the I-580 First Street and Vasco Road Interchange Modernizations, Tesla Road Multimodal Corridor Project, and the Iron Horse Trail Extension.[9]

### *Alameda County Climate Protection Project and Cities for Climate Protection Campaign*

In 2009, the Alameda County Climate Protection Project and Cities for Climate Protection Campaign organized a coordinated effort by all 14 cities in Alameda County, including Livermore, to reduce the emissions that cause global warming as well as improve air quality, reduce waste, cut energy use, and save money. Participants work together across jurisdictions focusing on key action areas, such as energy efficiency, transportation, and waste reduction, and on specific projects best addressed by a regional effort, such as collaborative grant applications and electric vehicle related infrastructure.

### *East Bay Community Energy Community Choice Aggregation Program*

East Bay Community Energy (EBCE) is a public agency based in Oakland and governed by a Board of local elected officials from each of the participating jurisdictions. In 2018, EBCE began supplying East Bay communities, including Livermore, with the option for 100 percent renewable energy-sourced electricity. Renewable energy is energy that comes from resources that are naturally replenished, create no carbon emissions, and include small hydroelectric, solar, wind, biomass, biowaste, and geothermal sources. At EBCE, renewable energy is specifically provided by solar and wind sources. Purchasing electricity from EBCE is a way to reduce GHG emissions and meet community climate action goals.

[9] Alameda County Transportation Commission (ACTC). 2020. Countywide Transportation Plan. Available: <https://www.alamedactc.org/wp-content/uploads/2021/02/2020_CTP_Final.pdf>. Accessed May 6, 2022.

## State Sustainability and GHG Emissions Reduction Efforts

As follows is a summary of the State GHG emissions reduction efforts, which the Livermore CAP Update is intended to be consistent with or exceed.

### *California Executive Order S-3-05*

In 2005, the California governor issued Executive Order (EO) S-3-05, which identifies Statewide GHG emissions reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020
- Reduce GHG emissions to 80 percent below 1990 levels by 2050

In response to EO S-3-05, California Environmental Protection Agency (CalEPA) created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report"). The *2006 CAT Report* identified a recommended list of strategies that the State could pursue to reduce GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the State agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, among others.

### *California Assembly Bill 32, California Global Warming Pollution Solutions Act*

In 2006, the California legislature signed Assembly Bill (AB) 32 – the Global Warming Solutions Act – into law, requiring a reduction in Statewide GHG emissions to 1990 levels by 2020 and California Air Resources Board (CARB) preparation of a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 required CARB to adopt regulations to require reporting and verification of Statewide GHG emissions. Based on this guidance, CARB approved a 1990 Statewide GHG level and 2020 limit of 427 metric tons (MT) of carbon dioxide equivalent ($CO_2e$).

### *California Senate Bill 375, Sustainable Communities and Climate Protection Act*

In 2008, Senate Bill (SB) 375) enhanced the State's ability to reach AB 32 targets by CARB to develop regional GHG emissions reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPO) to prepare a sustainable community's strategy (SCS) that contains a growth strategy to meet such regional GHG emissions reduction targets for inclusion in the respective regional transportation plan (RTP).

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. ABAG was assigned targets of a ten percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a nineteen percent reduction in per capita GHG emissions from passenger vehicles by 2035.

### *California Climate Change Scoping Plan*

In 2008, CARB approved the original California Climate Change Scoping Plan, which included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in

the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted and implemented since approval of the Scoping Plan.

### *California Climate Change Scoping Plan Update (2013)*

In 2013, CARB approved the first update to the California Climate Change Scoping Plan. The 2013 Scoping Plan Update defined CARB climate change priorities for the next five years and set the groundwork to reach post-2020 Statewide GHG emissions reduction goals. The 2013 Scoping Plan Update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use.

### *California Executive Order B-30-15*

In 2015, the California governor issued Executive Order B-30-15, which established a Statewide mid-term GHG reduction target of 40 percent below 1990 levels by 2030.

### *California Senate Bill 32, California Global Warming Pollution Solutions Act Update*

In 2016, the California legislature signed Senate Bill 32 (SB 32) into law, extending AB 32 by requiring further reduction in Statewide GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below).

### *California Climate Change Scoping Plan Update (2017)*

In 2017, CARB approved the second update to the California Climate Change Scoping Plan. The 2017 Scoping Plan put an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan Update does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with Statewide per-capita goals of six MT of $CO_2e$ by 2030 and two MT of $CO_2e$ by 2050. As stated in the 2017 Scoping Plan Update, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects, because they include all GHG emissions sectors in the State.[10]

### *California Executive Order B-55-18*

In 2018, the California governor issued Executive Order B-55-18, which established a new Statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing Statewide GHG reduction targets established by SB 32.

For more information on the Senate and Assembly Bills, Executive Orders, and Scoping Plans discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

[10] California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. Available: <https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf>. Accessed May 16, 2022.

### *Assembly Bill 1493, Pavley Bill Vehicle Efficiency Standards*

In 2002, the California State Legislature enacted Assembly Bill 1493 (aka "the Pavley Bill"), which directs the CARB to adopt standards that will achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles," taking into account environmental, social, technological, and economic factors. In September 2009, CARB adopted amendments to the "Pavley" regulations to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The Pavley Bill is considered to be the national model for vehicle emissions standards. In January of 2012, CARB approved a new emissions control program for vehicle model years 2017 through 2025. The program combines the control of smog, soot, and GHGs and the requirement for greater numbers of zero emission vehicles into a single package of standards called Advanced Clean Cars.

### *California Energy Efficiency Strategic Plan of 2008*

In September 2008, the California Public Utilities Commission (CPUC) adopted California's first Long Term Energy Efficiency Strategic Plan, presenting a single roadmap to achieve maximum energy savings across all major groups and sectors in California. The Strategic Plan was subsequently updated in January 2011 to include a lighting chapter. The Strategic Plan sets goals of all new residential construction and all new commercial construction in California to be zero net energy (ZNE) by 2020 and 2030, respectively. In 2018, the California Energy Commission voted to adopt a policy requiring all new homes in California to incorporate rooftop solar. This change went into effect in January 2020 with the adoption of the 2019 California Code of Regulations (CCR) Title 24 Code and is a step towards the State achieving its goal of all residential new construction being ZNE by 2020. Additionally, the Strategic Plan sets goals of 50 percent of existing commercial building to be retrofit to ZNE by 2030 and all new State buildings and major renovations to be ZNE by 2025.

### *California Code of Regulations Title 24 (California Building Code)*

Updated every three years through a rigorous stakeholder process, Title 24 of the CCR requires California homes and businesses to meet strong energy efficiency measures, thereby lowering their energy use. Title 24 contains numerous subparts, including Part 1 (Administrative Code), Part 2 (Building Code), Part 3 (Electrical Code), Part 4 (Mechanical Code), Part 5 (Plumbing Code), Part 6 (Energy Code), Part 8 (Historical Building Code), Part 9 (Fire Code), Part 10 (Existing Building Code), Part 11 (Green Building Standards Code), Part 12 (Referenced Standards Code). The California Building Code is applicable to all development in California. (Health and Safety Code §§ 17950 and 18938(b).)

The regulations receive input from members of industry, as well as the public, with the goal of "[r]educing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy." (Pub. Res. Code § 25402.) These regulations are carefully scrutinized and analyzed for technological and economic feasibility (Pub. Res. Code § 25402(d)) and cost effectiveness (Pub. Res. Code § 25402(b)(2) and (b)(3)).

#### PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS

CCR Title 24 Part 6 is the Building Energy Efficiency Standards. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. The Building Energy Efficiency Standards is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Building Energy Efficiency Standards through submission and approval of a Title 24

Compliance Report to the local building permit review authority and the CEC. Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and residential homes will be 7 percent more energy efficient. When accounting for the electricity generated by the solar photovoltaic system, residences would use 53 percent less energy compared to homes built to the 2016 standards.

The 2019 Building Energy Efficiency Standards, adopted on May 9, 2018, became effective on January 1, 2020. The 2019 Standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less. The 2019 Standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements. Under the 2019 Standards, nonresidential buildings will be 30 percent more energy-efficient compared to the 2016 Standards, and single-family homes will be seven percent more energy-efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.

### PART 11 – CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code, referred to as CALGreen, was added to CCR Title 24 as Part 11 first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2016 CALGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory Green Building Standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;
- 50 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of EV charging stations in newly constructed attached garages for single-family and duplex dwellings; and
- Installation of EV charging stations at least three percent of the parking spaces for all new multi-family developments with 17 or more units.

Similar to the compliance reporting procedure for demonstrating Building Energy Efficiency Standards compliance in new buildings and major renovations, compliance with the CALGreen water-reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

### *Senate Bill 97, CEQA Guidelines for Addressing GHG Emissions*

The California Environmental Quality Act (CEQA) requires public agencies to review the environmental impacts of proposed projects, including General Plans, Specific Plans, and specific kinds of development projects. In February 2010, the California Office of Administrative Law approved the recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments were developed to provide guidance to public agencies regarding the analysis, mitigation, and effects of GHG emissions in draft CEQA documents.

### *Assembly Bill 117, Community Choice Aggregation*

Assembly Bill 117 establishes the creation of Community Choice Aggregation (CCA) that fosters clean and renewable energy markets. CCA allows cities and counties to aggregate the buying power of individual jurisdictions. The California CCA markets were created as an answer to the brownouts and energy shortages of the early 2000's. AB 117 was passed in 2002 as an answer to California's increased energy independency by incorporating more alternative and renewable energy sources into its energy portfolio. With AB 117, municipalities can provide alternative energy choices to their local carrier (e.g. the Pacific Gas and Electric Company, PG&E). Marin Clean Energy was the first CCA in the State of California to go online with a 50 percent to 100 percent clean energy portfolio in 2010. In 2018, EBCE began supplying East Bay communities, including Livermore, with options for 100 percent renewable energy-sourced electricity or electricity from a mix of renewable and non-renewable sources. CCAs are governed by the California Public Utilities Commission (CPUC). SB 790 further ensures fair and transparent competition by creating a code of conduct and guiding principles for entrants into the CCA field.

### *Senate Bill 1275, Charge Ahead Initiative*

In 2014, Senate Bill 1275 established a State goal of one million zero-emissions and near-zero-emissions vehicles in service by 2020 and directed CARB to develop a long-term funding plan to meet this goal. SB 1275 also established the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs and increasing access to and benefits from zero-emissions vehicles for disadvantaged, low- and moderate-income communities and consumers.

### *Senate Bill 350, Clean Energy and Pollution Reduction Act of 2015*

In 2015, SB 350 established new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 codified Governor Brown's aggressive clean energy goals and established the State 2030 GHG reduction target of 40 percent below 1990 levels. To achieve this goal, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 (legislation originally enacted in 2002) to 50 percent by 2030. Renewable resources include wind, solar, geothermal, wave, and small hydroelectric power. In addition, SB 350 requires the State to double State-wide energy efficiency savings in electricity and natural gas end uses by 2030 from a base year of 2015.

### *Assembly Bill 197, State Air Resources Board GHGs Regulations*

In 2016, the California legislature approved AB 197, a bill linked to SB 32, which increases legislature oversight over CARB and directs CARB to prioritize disadvantaged communities in its climate change regulations, and to evaluate the cost-effectiveness of measures it considers. AB 197 requires CARB to protect the State's most impacted and disadvantaged communities [and] consider the social costs of the emissions of GHGs when developing climate change programs. The bill also adds two new

legislatively appointed non-voting members to CARB, increasing the Legislature's role in CARB's decisions.

### *Senate Bill 100, The 100 Percent Clean Energy Act of 2018*

In September 2018, Governor Brown signed SB 100, requiring that the State's load serving entities (including energy utilities and community choice energy programs) must procure energy generated 100 percent from Renewables Portfolio Standard for eligible renewable resources by 2045.

# Description of the Plan (CAP Update)

Livermore's CAP Update incorporates the many climate protection programs noted above and establishes new actions that will continue to reduce GHG emissions and increase resilience to climate change impacts. The CAP Update provides an update to Livermore's first Climate Action Plan adopted in 2012; upon its adoption the CAP Update will reflect Livermore's ongoing and active engagement through the 2045 planning horizon in addressing climate change, sustainability, and reductions in GHG emissions.

The City has developed the CAP Update in order to achieve several objectives, including reducing GHG emissions, improving quality of life and public health, enhancing community resilience and adaptability, and promoting thriving ecosystems and a thriving economy. The CAP Update establishes a new target and goal for reducing GHG emissions by 2030 and 2045, respectively. The CAP Update also provides a foundation for future sustainable development efforts in Livermore. It is anticipated that environmental documents for future development projects will identify and incorporate applicable GHG reduction strategies and actions from the CAP Update.

The CAP Update addresses communitywide GHG emissions and includes a goal of achieving carbon neutrality by 2045. It also includes a discrete target for Livermore to reach maximum emissions of 3.09 MT of $CO_2e$ per capita (or 327,539 MT of $CO_2e$ in total emissions) by 2030. This corresponds to a 68 percent reduction in per-capita GHG emissions below 1990 levels by 2030 (or a 40 percent reduction in communitywide GHG emissions below 1990 levels), meeting the California Senate Bill 32 target for 2030 to reduce total GHG emissions 40 percent below 1990 levels. The CAP Update assessed herein is based upon community-level inventories developed in 2005, 2010, 2015 and 2017, contains a list of strategies and respective supporting actions to achieve Livermore's sustainability goals and focuses on actions through 2030 for purposes of meeting the Livermore 2030 GHG emissions target and establishing significant progress towards meeting the 2045 carbon neutrality target.

The 2005 GHG emissions inventory provides an important foundation for the CAP Update, providing the basis for an emissions back-cast to 1990 to serve as the reference year from which the City's target to reduce per capita emissions to 68 percent below 1990 levels by 2030 has been developed. Approximately 9.62 MT of $CO_2e$ per person (545,898 MT of $CO_2e$ total) and 9.21 MT of $CO_2e$ per person (718,358 MT of $CO_2e$ total) were emitted in Livermore in 1990 and 2005, respectively. The 2017 inventory also provided the basis for the GHG emissions forecast, against which progress toward Livermore's 2030 target and 2045 goal can be measured. Approximately 5.92 MT of $CO_2e$ per person (535,566 MT of $CO_2e$ total) were emitted in Livermore in 2017. GHG emissions in the 2005 and 2017 inventories were emitted from the residential and commercial energy, transportation, water, wastewater, and waste sectors. The residential and commercial energy sector represents emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from on-road passenger

and commercial vehicles within Livermore, as well as off-road vehicles and equipment. The transportation sector was the largest contributor to Livermore's GHG emissions in both 2005 and 2017, followed by energy and waste. Table 1 provides the Livermore community GHG emissions in 2017 by sector.

**Table 1 2017 Livermore GHG Emissions Inventory Summary**

| Sector | Activity Data | Emission Factors | Units | MT $CO_2e$ |
|---|---|---|---|---|
| Residential Electricity (kWh) | 205,232,521 | 0.00009635 | MT $CO_2e$/kWh | 19,775 |
| Nonresidential Electricity (kWh) | 288,894,815 | 0.00009635 | MT $CO_2e$/kWh | 27,836 |
| Direct Access Electricity (kWh) | 32,283,926 | 0.0002027 | MT $CO_2e$/kWh | 6,545 |
| Residential Gas (therms) | 12,408,537 | 0.00531 | MT $CO_2e$/therms | 65,896 |
| Adjusted Nonresidential Gas (therms) | 10,820,445 | 0.00531 | MT/$CO_2e$/therms | 57,462 |
| Passenger On-Road Transportation (VMT) | 538,932,050 | 0.000338 | MT $CO_2e$/mile | 181,900 |
| Commercial On-Road Transportation (VMT) | 96,824,903 | 0.001366 | MT $CO_2e$/mile | 132,254 |
| Off-Road Transportation[1] | N/A | N/A | - | 18,002 |
| Waste (tons) | 81,766 | 0.2860 | MT $CO_2e$/ton | 23,052 |
| Wastewater (kWh) | N/A | N/A | MT $CO_2e$/kWh | 1,366 |
| Water (kWh) | 15,344,462 | 0.00009635 | MT $CO_2e$/kWh | 1,479 |
| **Total Emissions** | | | | **535,566** |

MWh: megawatt hours; kWh: kilowatt hours; $CO_2e$: carbon dioxide equivalent; MT: metric tons; VMT: vehicle miles traveled; ADC: Alternative Daily Cover

[1] Off-road emissions calculated using CARB's OFFROAD 2021 model, as a proportion of total emissions in Alameda County based on changes in population, and thus does not have activity data or emission factors.

Source: Draft Livermore CAP Update

As shown in Table 1, the largest sectors of GHG emissions are related to transportation (specifically on-road passenger and commercial vehicles) and building energy use (specifically residential and commercial electricity and natural gas use).

The 2030 GHG emissions goal is selected to be consistent with SB 32 State emissions targets and ABAG regional passenger vehicle emissions targets, to be consistent with CEQA for a qualified GHG emissions reduction strategy, and to be achievable by City-supported strategies and actions identified in the CAP Update. The CAP Update includes a business-as-usual (BAU) forecast and an adjusted BAU (ABAU) forecast of GHG emissions, based on the 2017 inventory, that will enable Livermore to estimate the amount of emissions reductions needed to meet its per capita reduction targets.

The CAP Update includes actions to achieving, or making progress towards achieving, Livermore's 2030 target and 2045 goal. Key among these, the CAP Update includes strategies and actions to electrify new and existing residential, commercial, and municipal buildings and increase the amount of renewable energy and storage for new buildings. It recommends increasing electric vehicle (EV) charging stations to encourage greater EV adoption in the community, and development patterns that emphasize complete streets that allow people to go about their business on foot, by bicycle, or

via public transportation. It also offers ways to reduce water use and divert organic and inorganic waste that would otherwise go to landfills. In addition, the CAP Update includes strategies and actions to increase urban greenspace and trees for carbon sequestration, improve climate adaptation and resilience, and to provide community education and outreach regarding the CAP Update and local sustainability efforts. The CAP strategies and actions are organized by the core climate vulnerabilities and emissions sources that the CAP Update addresses, including energy resilience (E), drought (D), flooding (F), extreme heat (H), and wildfires (WF), as well as strategies for buildings and energy (B), transportation and land use (T), materials and waste (W), carbon sequestration (S), municipal operations (M) and implementation (I).

Table 2 includes a complete list of the CAP Update strategies and descriptions of respective supporting actions as well as anticipated annual GHG reductions in 2030 and 2045.

### Table 2 Livermore CAP Update Strategies and Actions

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| **Strategy E-1: Enhance community energy resilience.** | | |
| E-1.1 | **Increase local and regional grid reliability:** Work with EBCE, PG&E, other Tri-Valley cities, and the Lawrence Livermore National Laboratory to create a regional grid reliability strategy, with the goal of assessing vulnerabilities to maximize local resilience. | Supportive |
| E-1.2 | **Expand microgrid deployment:** Based on the results of the municipal pilot (M-1.2) expand microgrid deployment to provide resilience at critical facilities (fire, police, city hall) and in vulnerable communities. Partner with the Lawrence Livermore National Laboratory on microgrid projects and identify opportunities to obtain state and federal funding. | Supportive |
| E-1.3 | **Improve resilience of residential buildings:** Implement a Neighborhood Retrofit Program to improve resilience in residential buildings (i.e., on-site power generation and storage, weatherization, air conditioning, etc.), with an emphasis on connecting incentives and resources with rental property owners and low-income residents. Partner with community organizations to leverage existing resources. | Supportive |
| E-1.4 | **Improve resilience of non-residential buildings:** Develop an equitable incentive program to improve resilience in non-residential buildings to prevent disruptions in the local economy during power outages. | Supportive |
| **Strategy D-1: Improve water conservation and reuse.** | | |
| D-1.1 | **Study on-site water reuse:** Partner with Zone 7, Cal Water, large water users, and other stakeholders to study on-site water reuse to maximize utilization of local water supplies. This study should explore a broad range of strategies for on-site stormwater capture, wastewater treatment, and re-use in both commercial and residential settings. | Supportive |
| D-1.2 | **Establish standards for on-site water reuse:** Based on the findings of the On-Site Water Reuse Study, establish standards to expand on-site water reuse. These standards could require new developments and major renovations to meet toilet, urinal, and irrigation demands through available greywater, stormwater, or other onsite sources. | Supportive |
| D-1.3 | **Continue implementing the Water Efficient Landscape Ordinance:** Improve enforcement of the Water Efficient Landscape Ordinance during plan check and inspection of new and renovated landscaping. | Supportive |
| D-1.4 | **Develop a water efficient demonstration program:** Collaborate with residents, businesses, and agency partners to promote native, drought-tolerant landscaping through water-efficient landscape demonstration projects. Identify and promote incentives and financing opportunities. | Supportive |
| D-1.5 | **Continue to provide water efficiency devices and encourage residential water capture and reuse:** Continue working with Zone 7 and Cal Water to provide free or subsidized water conservation devices to residents with a focus on low-income communities. Encourage the installation of cisterns and other water storage devices for single-family homes to capture rainwater for irrigation uses. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| **Strategy F-1: Improve stormwater management.** | | |
| F-1.1 | **Prioritize wetland restoration:** Implement projects in the Stream Maintenance Plan that will revitalize urban creeks and floodplains, encourage groundwater recharge, and use native plant species to reduce flood risk and restore riparian habitats. Support and promote local programs such as Living Arroyos. | Supportive |
| F-1.2 | **Prioritize flood resiliency projects:** Implement stormwater management projects identified in Livermore's Storm Drain Master Plan, Green Infrastructure Plan, and Capital Improvement Program that improve flood resilience from future storms. Ensure new infrastructure and retrofits are adequately sized to handle future flows exacerbated by climate change. | Supportive |
| F-1.3 | **Expand passive rain capture standards**: Expand the requirements for passive rain capture features, such as vegetative swales and planting trees, in new infrastructure and development projects, particularly in areas of Livermore that are vulnerable to flooding. | Supportive |
| F-1.4 | **Provide incentives to increase passive rain capture:** Work with water and wastewater providers to create and promote incentivizes for existing landscapes to incorporate passive rain capture features. | Supportive |
| F-1.5 | **Require new hardscape to be permeable:** Update standards to new development hardscape to be consistent with CALGreen Tier 1 and/or increase the current fee for installation of new impervious surfaces. | Supportive |
| F-1.6 | **Combine tree planting and stormwater management:** Include stormwater management strategies like bioswales when implementing tree planting and other urban greening programs, with a focus on low-income communities. | Supportive |
| **Strategy H-1: Increase resilience to extreme heat events.** | | |
| H-1.1 | **Study heat vulnerability:** Building off efforts in the 2023 Tri-Valley Local Hazard Mitigation Plan, create a Heat Vulnerability Index to identify and map heat-vulnerable areas and populations in Livermore. Explore actions to reduce urban heat and prepare for higher temperatures and more frequent extreme heat events. | Supportive |
| H-1.2 | **Expand tree canopy cover in Livermore:** Utilize the City's new street tree inventory and other available tools to identify areas of Livermore with low tree canopy cover. Focus tree planting in areas with underserved and vulnerable populations. | Supportive |
| H-1.3 | **Create a neighborhood cooling program:** As part of a Neighborhood Retrofit Program (E-1.3), implement cooling strategies consistent with Action H-1.1. Strategies could include planting trees, using heat-resistant materials, and installing heat pump HVAC units. Partner with local nonprofits and organizations to provide resources to low-income residents for retrofits. Partner with manufacturers or installers to make bulk purchases and installations in the community. | Supportive |
| H-1.4 | **Establish shade standards:** Establish shade standards to encourage continuous shade for human movement in areas with high public transit use to protect public transit riders from extreme heat and precipitation events. Standards may encourage shade-providing building features, such as galleries, arcades, and awnings, bus and train shelters, and tree planting. | Supportive |
| H-1.5 | **Install additional shade structures:** Build shade structures at public destinations that lack adequate tree cover, major transit stops, and along non-motorized transportation corridors, such as those identified in the City's Active Transportation Plan. Prioritize communities with high heat vulnerability. | Supportive |
| H-1.6 | **Increase resilience at cooling centers:** Ensure cooling centers have backup power systems in place to operate during power shutoffs. Explore the use of public libraries and other trusted community-serving facilities as additional cooling centers. | Supportive |
| H-1.7 | **Enhance heat response in emergency planning:** Integrate an emergency heat plan into the City of Livermore's Emergency Operations Plan that provides an emergency notification and well-being checks to protect the most vulnerable populations, such as Livermore's unsheltered population, low-income families, speakers of non-English languages, and older adults. | Supportive |
| **Strategy WF-1: Mitigate wildfire risk and improve preparedness.** | | |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| WF-1.1 | **Update hazard planning for wildfires:** Update the General Plan Safety Element and Tri-Valley Local Hazard Mitigation Plan to reflect the changing risk profile for wildfire including emergency response capabilities and evacuation plans. | Supportive |
| WF-1.2 | **Create fire-safe landscaping standards:** Adopt fire-safe landscaping standards for new construction and major renovations that are based on the risk profile. | Supportive |
| WF-1.3 | **Facilitate building retrofits:** As part of the Neighborhood Retrofit Program, incentivize building retrofits that help maintain indoor air quality during wildfires, including ventilation, filtration, and cooling, with an emphasis on connecting incentives and resources with low-income residents. | Supportive |
| WF-1.4 | **Continue to implement community fire fuel load reduction programs:** Continue to update and implement the annual Vegetation Management Program and Weed Abatement Program to remove and thin vegetation. | Supportive |
| WF-1.5 | **Continue to conduct outreach on fire prevention measures:** Continue to conduct multilingual public education programs to raise awareness of the new standards and best practices for fire-safe buildings and landscape management. This should include information about maintaining defensible space and implementing low-cost fire prevention measures, such as vegetation management and screening attic vents. | Supportive |
| WF-1.6 | **Operate clean air centers:** Ensure cooling centers can also function as clean air centers. Maintain temperature/air quality thresholds that dictate when these facilities become available. Gather input from users to determine how these facilities can continue to be improved and support daily life, such as by offering indoor exercise and recreation activities/spaces. | Supportive |
| WF-1.7 | **Stockpile personal protective equipment:** Stockpile masks and other personal protective safety equipment for community use during wildfire and/or smoke events and prioritize distribution to vulnerable communities. | Supportive |
| WF-1.8 | **Encourage use of the Alameda County (AC) Alert system:** Promote the AC Alert system to residents and business owners through multilingual, proactive, and culturally relevant outreach methods, with a focus on boosting enrollment in vulnerable communities. | Supportive |
| **Strategy B-1: Require new buildings to be all-electric and incentivize electrification retrofits.** | | |
| B-1.1 | **Require new construction to be all-electric:** Adopt an electrification ordinance which requires all new construction to be all-electric. Conduct a cost effectiveness study to develop an ordinance that facilitates both construction and on-bill cost savings. Minimize the number of exemptions associated with the ordinance to limit the number of stranded natural gas lines in Livermore. Allow case by case allowances for certain site development standards when an applicant can demonstrate infeasibility. Leverage partnerships with the Building Decarbonization Coalition, EBCE, StopWaste, and others, to engage with local building industry stakeholders in development of the ordinance. | 2030: 10,839<br>2045: 28,056 |
| B-1.2 | **Incentivize electric retrofits in existing buildings:** Incentivize voluntary electrification of existing buildings through incentives, rebates, permit streamlining, and education. Develop a suite of equity strategies to limit displacement and promote equitable distribution of electrification benefits like resilience, improved health and safety, and reduced energy cost burden. Partner with stakeholders such as EBCE and PG&E to establish funding pathways to ease community costs for electrification upgrades. | 2030: 13,704<br>2045: 93,437 |
| B-1.3 | **Conduct a cost analysis and feasibility study for existing building electrification requirements:** Conduct an existing building electrification feasibility and cost study to understand the potential for, and associated costs of, electrification retrofitting requirements. This would include an analysis for implementing requirements for newly permitted heating and cooling systems, hot water heaters, and other electric appliances. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| B-1.4 | **Partner with stakeholders to conduct electrification outreach, promotion, and education:** Leverage partnerships with stakeholders to conduct multilingual outreach, promotion, and education around building electrification, including:<br>▪ Creating a list of water heater, space heating, and appliance (electric stove/dryers) replacement programs and incentives.<br>▪ Hosting an induction/electric stove cooking competition to demonstrate the benefits of electric stoves.<br>▪ Organizing events to educate the public on the potential health and cost benefits of replacing gas stoves with electric.<br>▪ Offering workforce development trainings for installers and building owners/operators to discuss benefits and technical requirements of electrification.<br>▪ Conducting internal trainings with planners and building officials on state decarbonization goals and incentives available for electric homes.<br>▪ Conducting targeted outreach to rental property owners to facilitate upgrades that benefit renters. | Supportive |
| **Strategy B-2: Decarbonize electricity from the grid and increase local renewable energy generation.** | | |
| B-2.1 | **Opt-up community EBCE accounts to 100 percent renewable electricity:** Opt-up EBCE accounts in Livermore to 100 percent renewable electricity by 2024. Achieve an opt-out rate lower than 4 percent from 100 percent renewable. Conduct public outreach and education to highlight the benefits of 100 percent renewable energy. Partner with community-based organizations to ensure low/moderate income households are aware of EBCE's CARE program to receive decreased electricity rates. | 2030: 24,865<br>2045: 0 |
| B-2.2 | **Coordinate with stakeholders to provide local energy generation and storage incentives:** Work with PG&E, EBCE, and/or other community partners to support and incentivize local on-site energy generation and storage. This could include:<br>▪ Connecting home and business owners, particularly those in vulnerable communities, to incentives for renewable energy and storage projects.<br>▪ Promoting installation of storage technology in concert with renewable energy infrastructure through multilingual education programs, outreach, and information provided via City platforms.<br>▪ Installing a co-located community solar and storage facility to demonstrate the benefits. | Supportive |
| B-2.3 | **Establish renewable energy facility standards and permitting requirements:** Establish renewable energy facility standards and permit requirements, including solar arrays and battery storage systems, to allow for easier implementation of these technologies in Livermore. | Supportive |
| B-2.4 | **Explore hydrogen and renewable fuel opportunities**: Support hydrogen and renewable fuel projects, particularly in the transportation and industrial sectors. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| **Strategy T-1: Facilitate a transition to electric vehicles** | | |
| T-1.1 | **Expand EV infrastructure to support EV adoption:** Expand EV infrastructure to support EV adoption in the community by doing the following:<br>▪ Establishing standards for EV chargers in new development that expand requirements for EV-Capable, EV-Ready, and/or EV-Installed spaces; Introduce preferential parking for EVs near building entrances at popular destinations; Require all new gas stations and major remodels to install an EV charger; Establish universal, accessible, and multilingual EV signage and marking requirements for EV parking spaces.<br>▪ Partnering with stakeholders, like EBCE, BayREN, and affordable housing providers, to coordinate incentives and/or rebates for at-home electric circuits, panel upgrades, and Level 2 chargers, with a focus on supporting EV upgrades for low-income households. Provide multilingual education and outreach to the community on available programs.<br>▪ Working with the Livermore Valley Chamber of Commerce, Livermore Downtown Inc, and major employers (e.g., Lawrence Livermore National Lab, Kaiser Permanente, GILLIG, Topcon, LARPD, and LVJUSD) to encourage EV adoption and improvements to EV infrastructure.<br>▪ Promoting the availability of public chargers on social media and the City website. | Supportive |
| T-1.2 | **Identify barriers to EV adoption:** Assess EV infrastructure needs and challenges, strategies to increase EV infrastructure and EV adoption, particularly in underserved communities, and identify funding for charging infrastructure. | 2030: 39,599<br>2045: 93,458 |
| T-1.3 | **Electrify retail delivery vehicles:** Establish licensing fees for vehicles making deliveries, such as online retail deliveries, to provide funding for new active transportation and EV charging infrastructure, and/or provide discount licensing fees for delivery companies which utilize electric vehicles. | |
| T-1.4 | **Reduce sources of idling emissions:** Adopt an ordinance limiting new drive thru businesses and other sources of idling emissions. | |
| T-1.5 | **Develop an EV car share pilot program:** Work with stakeholders to develop an EV car share pilot program to provide access to a low cost and emission free mobility option in low-income communities. | Supportive |
| **Strategy T-2: Facilitate a transition to transit and shared mobility services.** | | |
| T-2.1 | **Improve transit and shared mobility services:** Improve transit and shared mobility services to reduce single-occupancy vehicle travel by doing the following:<br>▪ Supporting efforts by transit providers to offer more frequent and reliable transit service; improve service/communication through multilingual interactive service maps, mobile payments, and real-time arrival info; improve active transportation access to transit stops; and provide enhanced, comfortable stops and stations.<br>▪ Conducting a shared mobility services (e.g., car-share, bike-share, scooter-share) feasibility study, possibly in coordination with neighboring communities Pleasanton and Dublin.<br>▪ Based on the feasibility study, establish standards for shared mobility services to operate in Livermore.<br>▪ Consider a pilot program downtown, ideally with e-bikes or scooters.<br>▪ Identify local equity issues and remove barriers for people of color, low-income, people experiencing homelessness, and senior populations to take transit, walk, bike, use rideshare, or carshare. | 2030: 3,033<br>2045: 4,656 |
| T-2.2 | **Conduct a local transportation survey:** Include multilingual National Citizens Survey questions related to transportation to better understand the community's needs and motivation for travelling by car versus other alternatives such as by bike or bus. Use the survey results to inform transportation projects. | Supportive |
| T-2.3 | **Establish ride-share loading/unloading zone requirements:** Establish requirements for ride-share parking and loading/unloading zones in new non-residential development. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| **Strategy T-3: Improve active transportation infrastructure.** | | |
| T-3.1 | **Accelerate implementation of the Livermore Active Transportation Plan:** Implement 50 percent of the Livermore Bicycle, Pedestrian, and Trails Active Transportation Plan (ATP) by 2030 in accordance with its goals, objectives, and policies so that the City adds approximately 77 miles to the active transportation network. Continually improve methods for engaging the community, gathering input, and utilizing it to prioritize projects that implement the ATP. Review all ATP projects to ensure ATP projects are deployed equitably across all Livermore neighborhoods with an emphasis on connecting low-income communities to downtown and public transportation. | 2030: 2,127<br>2045: 2,111 |
| T-3.2 | **Conduct an ATP fee study:** Conduct a fee study and adopt an ordinance requiring development projects to pay fees that will be dedicated to implementing active transportation routes and infrastructure citywide. | Supportive |
| T-3.3 | **Promote active transportation through car-free events:** Identify areas of town to periodically close streets to cars, potentially coupled with the Farmer's Market or other large and regular events. | Supportive |
| **Strategy T-4: Support sustainable land use practices.** | | |
| T-4.1 | **Promote a jobs-housing match:** Update the General Plan to promote a housing supply that meets the needs of Livermore's workforce. | Supportive |
| T-4.2 | **Maximize infill development**: Update the Development Code and specific plans to maximize opportunities for infill development. | Supportive |
| T-4.3 | **Revise parking standards for developments:** Adjust parking minimums and establish parking maximums where appropriate, such as near transit. | Supportive |
| T-4.4 | **Facilitate complete and walkable neighborhoods:** Identify opportunities to update zoning in neighborhoods lacking amenities like grocery stores and parks. Work with community partners to focus these efforts in low-income communities. | Supportive |
| **Strategy W-1: Reduce the amount of waste that is landfilled.** | | |
| W-1.1 | **Implement the requirements of Senate Bill 1383:** Implement SB 1383, which includes expanded organics collection, edible food recovery, municipal compost procurement, outreach and education programs, and an inspection and compliance program. | 2030: 7,556<br>2045: 7,834 |
| W-1.2 | **Maintain or exceed the City's solid waste diversion goal:** Maintain or exceed the City Council mandated goal of 75 percent diversion every year. | Supportive |
| W-1.3 | **Reduce landfill waste at public events:** Increase reuse, recycling, and composting and encourage reduction/reuse at temporary public events by mandating the use of recycling and organics collection co-located at every garbage can; encourage reusable food ware, when relevant, according to the California State Retail Food Code. | Supportive |
| W-1.4 | **Improve waste management in commercial industries:** Develop policies to reduce waste and increase reuse in the food industry (e.g., restaurants, facilities serving prepared food and prepackaged food; home meal delivery services), hospitality industry, and other commercial industries. Efforts may include adopting ordinances for compostable food ware, a ban on single-use individual toiletry bottles in hotels/motels, grant/discount programs for switching to reusables, and working with home meal delivery services (e.g., Blue Apron), etc. to reduce single-use packaging and encourage reuse. Provide resources for multilingual technical assistance and financial incentives for low-income entrepreneurs. | Supportive |
| W-1.5 | **Reduce construction waste:** Require construction sites to separate waste for proper diversion and reuse or recycling, consistent with CALGreen voluntary requirements. | Supportive |
| W-1.6 | **Improve reuse and repair:** Partner with State and other public institutions to develop and implement programs that improve reuse and repair such as Fix it Clinics and tool lending libraries. Work with retailers to develop programming around reuse and repair**.** | Supportive |
| W-1.7 | **Work with community partners to recover food:** Support community partners such as the Alameda County Community Food Bank and Tri-Valley Haven to divert edible food waste and support food insecure community members. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| **Strategy W-2: Expand use of low-carbon and recycled building materials.** | | |
| W-2.1 | **Raise awareness for low-carbon and recycled building materials:** Work with local, regional, and State partners to expand the awareness, availability, and cost-effectiveness of low-carbon and/or recycled construction materials. | Supportive |
| W-2.2 | **Explore standards for new construction that limit embodied carbon emissions:** Consider implementing embodied carbon performance standards including materials and material-efficient building practices, with exemptions for cost barriers as needed to prevent these changes from directly increasing housing or rent costs. | Supportive |
| **Strategy S-1: Maximize local carbon sequestration.** | | |
| S-1.1 | **Expand tree canopy cover in Livermore:** Consistent with Action H-1.2, utilize the City's new street tree inventory and other available tools to identify areas of Livermore with low tree canopy cover. Conduct tree planting efforts in these areas, with a focus on underserved and vulnerable populations. Update the City's Tree Preservation Ordinance to promote increased canopy coverage and climate-ready tree species in developments. Additionally, identify strategies to repurpose timber waste (rather than incineration or chipping).Livermore | 2030: 58<br>2045: 58 |
| S-1.2 | **Implement carbon farming projects using SB 1383-compliant organic materials:** SB 1383 requires Livermore to procure approximately 7,297 tons of compost or other organic material annually. Work with agricultural and public agency stakeholders to partner on carbon farming projects to apply SB 1383-compliant organic material locally. | Supportive |
| S-1.3 | **Update the City's landscaping standards:** Update City standards to expand requirements for shade trees and plant species that sequester a high amount of carbon. | Supportive |
| S-1.4 | **Preserve open spaces:** Continue the City's open space preservation efforts to preserve open space as conservation land or working land to maintain carbon sequestration and other benefits. | Supportive |
| S-1.5 | **Explore technology-based carbon capture and storage opportunities.** Partner with carbon restoration leaders, including the National Laboratories, to explore opportunities for technology-based carbon capture and storage projects. | Supportive |
| **Strategy M-1: Enhance resilience at public facilities.** | | |
| M-1.1 | **Demonstrate the feasibility of community wide energy resilience through a municipal pilot project:** Through the development of a municipal microgrid project at a critical facility, the City will demonstrate the feasibility of expanding local electricity generation and storage to improve community resilience. | Supportive |
| M-1.2 | **Expand renewable energy and battery storage projects:** Install renewable energy and battery back-up systems at municipal facilities (city hall, police department, water reclamation plant) to increase energy independence and reliability during blackouts, extreme heat events, and other emergency incidents. | Supportive |
| M-1.3 | **Retrofit municipal facilities to withstand climate-related hazard conditions:** Ensure that City facilities are sufficiently hardened to withstand climate-related hazard conditions, such as weatherization for extreme storm events and better seals to outdoor air during wildfire smoke days. | Supportive |
| **Strategy M-2: Electrify municipal facilities and operations.** | | |
| M-2.1 | **Opt-up municipal EBCE accounts to 100 percent renewable electricity:** Opt-up municipal accounts to 100% renewable electricity by 2023. | Supportive |
| M-2.2 | **Conduct energy audits of City facilities and evaluate life cycle costs of energy upgrades:** Complete energy audits for all City facilities and implement feasible recommendations for fuel switching and efficiency upgrades. Develop a policy for the City which would require all new building upgrades to include life cycle costing over 30 years and tie this directly to energy consumption and building electrification. This would include the building's operational and maintenance costs and ensure that the City has the most cost effective (and sustainable) building possible. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| M-2.3 | **Electrify existing buildings and increase energy efficiency:** Adopt retrofitting policy for City-owned buildings such that electrification and energy efficiency retrofits are incorporated into City buildings as part of building upgrades and repairs identified in the Capital Improvement Program. | Supportive |
| M-2.4 | **Replace gas-powered landscaping equipment:** Transition to all-electric landscaping equipment, including leaf blowers, for municipal operations. Use this to promote all-electric equipment in the community, providing information on the City website outlining available incentives for residents and businesses. | Supportive |
| **Strategy M-3: Electrify the City's vehicle fleet and encourage City employees to utilize alternative transportation and teleworking opportunities.** | | |
| M-3.1 | **Prepare a Fleet Electrification Plan:** Prepare a Fleet Electrification Plan that outlines the transition of the municipal fleet to electric vehicles where possible. | Supportive |
| M-3.2 | **Expand EV charging at public facilities:** Install new public and employee EV chargers at City-owned facilities. | Supportive |
| M-3.3 | **Increase bike facilities at public buildings:** Establish bike lockers at City Hall that are usable to the public. Add bike locker facilities at off-street parking lots. | Supportive |
| M-3.4 | **Increase teleworking opportunities:** Adopt an internal policy to allow City employees to work from home on a regular basis, as specific job positions allow. | Supportive |
| **Strategy M-4: Conserve water in municipal landscaping and improve on-site stormwater management.** | | |
| M-4.1 | **Conserve water in City landscaping:** Implement water conservation measures, such as increasing efficiency and use of recycled water, in City landscaping and grounds maintenance procedures. | Supportive |
| M-4.2 | **Convert existing turf areas on municipal sites:** Reduce water use by converting existing turf areas to drought tolerant and/or native landscaping. | Supportive |
| M-4.3 | **Convert impermeable surfaces on municipal sites:** Identify City-owned impermeable surfaces that can be targeted for a transition to increased infiltration. | Supportive |
| **Strategy M-5: Purchase more sustainable products to reduce waste from City operations.** | | |
| M-5.1 | **Adopt a green purchasing policy:** Adopt an Environmentally Preferable Purchasing Policy for municipal operations. | Supportive |
| **Strategy M-6: Utilize public lands to increase local carbon sequestration and reduce urban heat island effect.** | | |
| M-6.1 | **Expand open space management:** Expand management of City-owned public lands and landscaping to improve carbon sequestration; evaluate and ensure that landscaping plans utilize native species where feasible. | Supportive |
| M-6.2 | **Coordinate with other public agencies and stakeholders on carbon sequestration:** Coordinate with other public agencies and stakeholders on carbon sequestration efforts, including soil carbon farming and carbon capture and storage. | Supportive |
| **Strategy I-1: Make climate impacts and resilience a standard consideration during planning and development processes.** | | |
| I-1.1 | **Evaluate climate impacts and risk in development review:** Implement an internal process to consider climate change impacts and risks during development review. Amend the standard City Council agenda report template to include a statement on how the project or program supports or addresses CAP goals. | Supportive |
| I-1.2 | **Consider climate impacts and risk in Capital Improvement Program projects:** Ensure that new infrastructure will be designed with forecasted changes in climate (precipitation, temperature, wildfire) in mind. Utilize the Livermore Vulnerability Tool, as well as Google Environmental Insights Explorer tools and data, to evaluate the potential climate impacts when assessing new public infrastructure projects. Utilize materials that reduce environmental impact, such as low-carbon concrete and drought tolerant plants. | Supportive |
| I-1.3 | **Conduct a carbon fee study:** Conduct a study and explore an ordinance requiring development fees from projects that exceed a determined threshold of carbon emissions. Dedicate revenues to implement CAP programs. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| I-1.4 | **Evaluate the financial risks of climate impacts:** Evaluate existing and potential financial risks posed by climate change to both the City and community. Recommend strategies to mitigate these risks as available and appropriate, including options for insurance products, green infrastructure bonds, real estate strategy and other appropriate mechanisms. | Supportive |
| I-1.5 | **Integrate mitigation and adaptation planning in other City plans:** Coordinate mitigation and adaptation planning with other City plans, including the Tri-Valley Local Hazard Mitigation Plan, General Plan, Active Transportation Plan, Green Infrastructure Plan, Emergency Response Plan, and zoning land use codes. | Supportive |
| **Strategy I-2: Dedicate City resources to CAP implementation and consistently monitor progress.** | | |
| I-2.1 | **Designate a Climate Action Manager:** Create a Climate Action Manager position responsible for implementing CAP measures and actions by drafting ordinances, managing technical studies, leading outreach efforts, updating the online portal, networking with partners and stakeholders, and pursuing grant opportunities. | Supportive |
| I-2.2 | **Establish local incentives, rebates, and streamlined permitting to facilitate CAP implementation:** Establish local incentive and rebate programs to assist residents and businesses in areas such as building electrification, weatherization, and EV charging. Streamline permitting processes to further incentivize implementation of CAP efforts. | Supportive |
| I-2.3 | **Create a CAP tracking program:** Develop a tracking program for CAP efforts to track annual implementation progress. | Supportive |
| I-2.4 | **Report implementation progress:** Report progress on CAP implementation annually to the City Council to measure progress and ensure accountability in achieving CAP goals. Report GHG emissions and CAP information to a Public Disclosure Program, such as the Carbon Disclosure Program and SEEC Clear Path. | Supportive |
| I-2.5 | **Prioritize equitable implementation:** Implement CAP measures and actions through an equity lens. Work to ensure that communities who are most impacted by climate change, including people of color, low-income families, and people experiencing homelessness, benefit the most from adaptation and mitigation efforts. | Supportive |
| I-2.6 | **Utilize Assistance Programs and Pursue Funding Opportunities:** Pursue funding opportunities to implement CAP actions. Utilize guidance, resources, and technical expertise from partners like EBCE and StopWaste. Expand staff capacity through programs like Civic Spark and Climate Corps. | Supportive |
| **Strategy I-3: Create a public outreach campaign to educate the community about CAP initiatives.** | | |
| I-3.1 | **Create a brand and identity:** Develop a consistent brand for all climate action campaign activities, which may be used in logos and hashtags. | Supportive |
| I-3.2 | **Promote transparency to the public:** Communicate the City's climate action goals and progress to the public regularly, with information displayed prominently on physical and digital outlets citywide. | Supportive |
| I-3.3 | **Engage with the community regularly:** Hold regular climate action outreach events, such as workshops, presentations, focus groups targeted at specific community groups, public contests or challenges, and an annual event such as Earth Day or New Year's Green Resolutions. Inform the community on potential climate change impacts, as well as weatherization and other actions that community members can take to increase resilience in their home or business. | Supportive |
| I-3.4 | **Target commercial stakeholders and private institutions:** Develop workforce trainings and information that is specifically targeted to large commercial stakeholders in Livermore. This may include businesses in the agriculture and viticulture sector, contractors, realtors, restaurants, retail stores, and landscapers. Encourage climate change resilience planning and strategies in private companies, institutions, and systems essential to a functioning Livermore. | Supportive |
| I-3.5 | **Target rental and multi-family property owners:** Conduct targeted outreach to rental and multi-family property owners to incentivize upgrades for tenants, including electrification and weatherization. | Supportive |

| Action ID# | Strategies and Respective Supporting Actions | Anticipated GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| I-3.6 | **Expand outreach and education to Livermore's youth:** Expand on current outreach targeted towards students within Livermore to provide opportunities for education and action implementation. | Supportive |
| I-3.7 | **Establish an online resource portal:** Develop an online portal that provides climate action information and resources for all stakeholders and community members. Content may include resources on rebates and regulations, guides for reducing individual GHG emissions and preparing for climate emergencies, and a calendar of upcoming climate action events. | Supportive |
| I-3.8 | **Increase social resilience:** Increase community resilience/social capacity by supporting Neighbors Helping Neighbors programs. These programs enable neighbors to exchange contact information, acquire supplies, and establish a neighborhood plan to assist each other, particularly vulnerable residents, during climate emergencies. | Supportive |
| **Strategy I-4: Foster green innovation in Livermore.** | | |
| I-4.1 | **Expand the local green economy:** Coordinate economic development efforts identified in the 2021-2025 Economic Development Strategy with CAP actions. Attract companies and organizations to Livermore that will expand the local green economy and are innovators in sectors related to climate action and resilience. | Supportive |
| I-4.2 | **Coordinate with the National Laboratories:** Coordinate with Lawrence Livermore National Laboratory and Sandia to identify new technologies and potential pilot projects. | Supportive |

MT of $CO_2e$ = metric tons of carbon dioxide equivalent
Source: Compiled by Rincon based on information contained in the Livermore CAP Update.

The strategies and actions included in CAP Update (shown above in Table 2), combined with Statewide legislation and City initiatives, will enable Livermore to meet its GHG emissions reduction target pathway, a linear pathway to achieving a 68 percent reduction in per capita GHG emissions and 40 percent reduction in communitywide emissions from 1990 levels by 2030, which meets the State's goal of 40 percent below 1990 levels by 2030. Table 3 shows the contribution of the Statewide and City initiatives in conjunction with CAP Update strategies and actions to reduce Livermore's projected total emissions in 2030.

### Table 3 Livermore 2030 GHG Emissions Reductions from 2030 BAU levels

| State Initiative | Sector | GHG Emissions Reduction (MT of $CO_2e$) |
|---|---|---|
| Advanced Clean Cars Program | On-road Transportation | 94,871 |
| Renewable Portfolio Standard | All electricity | 27,286 |
| Title 24 | Residential Energy | 3,080 |
| A. Total State Initiative Emissions Reductions | | 125,238 |
| B. Total CAP Update Emissions Reductions | | 128,929 |
| C. Total Expected Emissions Reductions (A+B) | | **254,167** |
| D. Livermore Emissions Reduction Requirement per SB 32 (State Goal) | | **128,238** |
| E. Meets/exceeds State Goal? (C > D) | | **Yes** |

MT of $CO_2e$ = metric tons of carbon dioxide equivalent
Note: Totals may not add up due to rounding

Table 4 shows the 2030 GHG emissions and targets for Livermore, including the expected emissions once the strategies and actions listed in Table 2 are implemented.

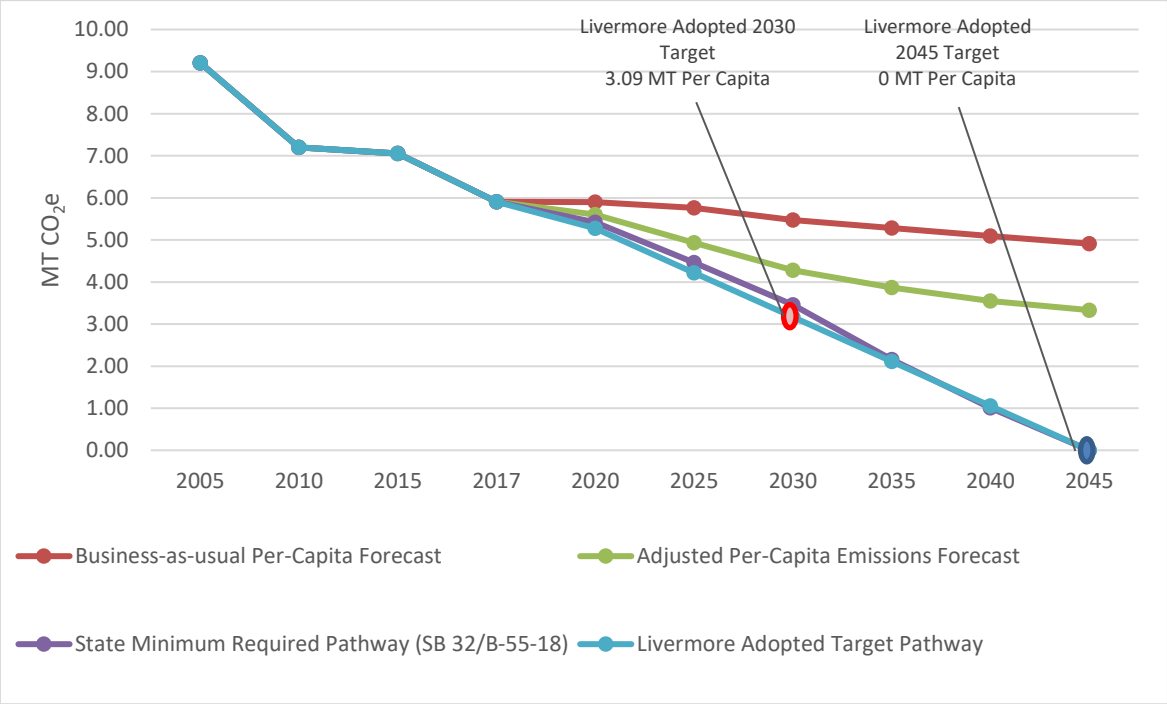
**Table 4 Livermore GHG Emissions Projections by Target Year**

| Description | Emissions (MT of $CO_2e$/person) | Emissions (MT of $CO_2e$ total) |
|---|---|---|
| 1990 Emissions | 9.62 | 545,898 |
| 2030 BAU Emissions | 5.48 | 581,014 |
| 2030 ABAU Emissions (including ongoing local actions) | 4.30 | 455,776 |
| 2030 Target Emissions (40% below 1990) | 3.09 | 327,539 |
| 2030 Expected Emissions with Implementation of CAP Update Primary Actions | **3.08** | **326,847** |

MT of $CO_2e$ = metric tons of carbon dioxide equivalent

Figure 3 depicts 2030 and 2045 GHG emissions and targets for Livermore, including the expected emissions once the strategies and actions listed in Table 2 are implemented. Figure 3 illustrates, for per capita emissions, the forecasted BAU emissions (in red) as well as the forecasted ABAU emissions (in green), after State-level and existing City-level initiatives are accounted for. Figure 3 also shows the minimum per-capita emissions reductions needed to meet State goals (in purple). Finally, Figure 3 depicts the emissions target/goal pathway trajectory and the emissions reductions needed after all State-and City-level actions and Livermore CAP Update actions are applied (in blue).

**Figure 3 Livermore Per Capita GHG Emissions Projections and Targets**




# General Plan Designation and Zoning

The CAP Update would be implemented throughout Livermore and would occur in all City General Plan designations and zoning designations. The CAP Update includes Strategy T-4, which directs the City to update the General Plan to promote a better balance of jobs and housing within Livermore and to update the development code to maximize opportunities for infill development. However, the CAP Update would not alter existing land use designations or zoning itself. The City's

implementation of this strategy would include a future technical update to the other elements of the General Plan and the rezoning of some sites to achieve the City's GHG reduction targets.

It is important to note that the approval of the CAP Update does not grant approval of potential land use designation or zoning changes but rather indicates that some land use parcels may need redesignation or rezoning in the future to help achieve the City's GHG reduction targets. The rezoning process and any amendments to the General Plan land uses would require discretionary review by the City Planning Commission, with the future changes ultimately adopted by the City Council. With that additional discretionary approval required, appropriate CEQA review of those land use parcels that require zone and/or General Plan designation changes would be necessary at the time those parcels are being considered for rezoning and/or redesignation. Therefore, the City's land use designation updates and potential rezoning program would be a separate project under CEQA and evaluated in accordance with CEQA at the time of its review. Prior to the approval of any changes in land use, the City would evaluate the potential environmental impacts from the rezoning or changes in the General Plan Land Use Element.

# Environmental Review Context

Implementation of the CAP strategies and actions listed in Table 2 could result in physical changes to the environment that could potentially have an impact on the environment. While individual projects resulting from these measures have not been identified, for the purposes of this document, the types of actions that could result from realization of the CAP Update are taken into account in considering potential environmental impacts that could occur through implementation of the CAP Update. For example, projects or actions requiring ministerial approval, such as installation of electric vehicle charging stations and supporting infrastructure, as well as new bicycle or pedestrian facilities, would introduce physical changes related to the temporary presence and operation of construction vehicles and equipment during installation of required facilities and the long-term presence of new facilities such as bike and pedestrian facilities, solar arrays, and electric vehicle charging stations, which could alter pedestrian and vehicular traffic patterns. Future plans or projects (including potential changes to land use designations or zoning) requiring discretionary approval would be subject to environmental review under CEQA, and individual impact analyses would identify required plan- or project-specific mitigation measures where applicable.

# Cumulative Scenario

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative scenario is buildout of the 2025 Livermore General Plan plus Livermore population projections through 2030 and 2045. The Livermore 2025 General Plan assumes a total of 40,160 housing units, 105,077 residents, and 87,960 jobs by the general plan horizon year in 2025.[11] In addition, Livermore projects a population of 105,967 persons and 49,372 jobs by the CAP Update planning horizon year of 2030 and 137,951 persons and 53,243 jobs by the horizon year of 2045.[12] These are slightly

[11] Livermore, City of. 2003. General Plan and Downtown Specific Plan EIR. Available: < https://www.livermoreca.gov/home/showpublisheddocument/7289/637587704118730000>. Accessed April 13, 2022.

[12] Livermore, City of. 2022. Draft Climate Action Plan Update.

higher than ABAG's 2018 population and jobs projections for 2030 but are utilized to provide a conservative analysis.[13]

# Required Approvals

## City of Livermore

Required approvals include:

- City Council adoption of the CAP Update Initial Study-Negative Declaration; and
- City Council adoption of CAP Update.

Although individual plans or projects may be implemented later under the umbrella of the CAP Update, each individual plan or project would be subject to separate environmental review under CEQA once project details and location specifics are known.

## Other Public Agencies

The City of Livermore has sole approval authority regarding the CAP Update. There are no other public agencies whose approval is required.

[13] Association of Bay Area Governments (ABAG). 2018. Plan Bay Area Projections. Available: <http://projections.planbayarea.org/>. Accessed April 13, 2022.

# Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agriculture and Forestry Resources | ☐ Air Quality |
| ☐ Biological Resources | ☐ Cultural Resources | ☐ Energy |
| ☐ Geology/Soils | ☐ Greenhouse Gas Emissions | ☐ Hazards & Hazardous Materials |
| ☐ Hydrology/Water Quality | ☐ Land Use/Planning | ☐ Mineral Resources |
| ☐ Noise | ☐ Population/Housing | ☐ Public Services |
| ☐ Recreation | ☐ Transportation | ☐ Tribal Cultural Resources |
| ☐ Utilities/Service Systems | ☐ Wildfire | ☐ Mandatory Findings of Significance |

# Determination

Based on this initial evaluation:

■ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

| | |
|---|---|
| Lead Agency Representative Signature | Date |
| Lead Agency Representative Printed Name | Title |

# Environmental Checklist

## 1 Aesthetics

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ■ | ☐ |
| b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? | ☐ | ☐ | ■ | ☐ |
| c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | ☐ | ☐ | ■ | ☐ |
| d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? | ☐ | ☐ | ■ | ☐ |

*a. Would the project have a substantial adverse effect on a scenic vista?*

*b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

The Livermore General Plan and General Plan Environmental Impact Report (EIR) identify scenic resources and vistas within and nearby Livermore as the hillsides and ridgelines surrounding Livermore to the north and south, Mount Diablo to the northwest, Brushy Peak to the northeast, major arroyos and creeks (e.g., Cottonwood Creek, Collier Canyon Creek, Cayetano Creek, Valle Dry Creek, Kellogg Creek, Altamont Creek, Arroyo Las Positas, Arroyo Mocho, Arroyo Seco, and Arroyo Del Valle), and the Del Valle Reservoir to the south of Livermore. Scenic vistas are primarily available from the urban edges of Livermore, where development is less dense, and from major transportation arterials. I-580 is eligible for designation as a State scenic highway and runs east-west through the northern portion of Livermore. I-580 offers views of the wooded hillsides, Brushy Peak, Mount Diablo, and surrounding valleys. A portion of SR-84 approximately five miles to the southwest of Livermore is also eligible for designation as a State scenic highway. The nearest officially designated State Scenic Highway is I-680, which runs north-south and is located

approximately four miles west of Livermore in the City of Pleasanton.[14] The Livermore General Plan identifies I-580 as a locally-designated Scenic Corridor and lists portions of several roads as Major Scenic Streets including Tassajara Road, Dolan Road, Collier Canyon, Harford Avenue, North Livermore Avenue, and Altamont Pass Road, amongst others.[15]

As a policy document, the CAP Update would not result in impacts related to scenic vistas and scenic highways. However, implementation of some CAP Update strategies promote infrastructure development that may alter the visual setting of future project sites. CAP Update Strategies E-1, B-2, and M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems at both municipal facilities and in private development to provide greener renewable electricity. CAP Update Strategies T-2 and T-3 involve actions to reduce vehicle miles traveled (VMT) and improve the multi-modal circulation system, including the installation of new bicycle, pedestrian, and public transit infrastructure such as bike lanes and a new electric trolley service. CAP Update Strategy T-1 encourages the installation of electric vehicle charging stations and supporting infrastructure. Additionally, CAP Update Strategy F-1 would expand green stormwater management infrastructure in Livermore, including wetland restoration and flood resiliency projects, and CAP Update Action H-1.2 and Strategy S-1 would result in new tree planting and greenspace throughout Livermore.

The CAP Update would promote infrastructure development and redevelopment that is complimentary to existing development and land uses and would primarily be concentrated in the existing urbanized areas. Though the implementation of the CAP Update may result in future development, CAP Update-related projects and actions, including those identified above, would be required to adhere to City development zoning, regulations, and guidelines, including the Livermore Design Standards and Guidelines, which establish criteria for the aesthetic qualities of new and retrofitted development in Livermore including design, architecture, lighting, landscaping, and signage.[16] Future CAP Update-related projects would also undergo design review by the Planning Commission or Administrative Design Review by the Planning Division as applicable.[17] Compliance with the LMC and Livermore Design Standards and Guidelines would ensure that potential future infrastructure development and redevelopment related to the CAP Update would be carefully integrated with the existing character of the Livermore community, minimizing potential aesthetic impacts. In addition, CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan policies related to scenic resources prior to approval. As such, the CAP Update would not result in adverse impacts related to scenic vistas or State scenic highways within Livermore. Therefore, the CAP Update would result in ***less-than-significant impacts*** related to scenic vistas and scenic resources within State scenic highways.

[14] California Department of Transportation (Caltrans). 2022. California State Scenic Highway System Map. Available: <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa>. Accessed April 14, 2022.

[15] Livermore, City of. 2003. Livermore General Plan Update Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <http://dev.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?blobid=23819>. Accessed April 14, 2022.

16 Livermore, City of. 2004. Design Standards and Guidelines. Available: <https://www.cityoflivermore.net/government/community-development/planning/design-standards-and-guidelines>. Accessed April 18, 2022.

17 Livermore, City of. 2009. Design Review. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1007/637175931583270000>. Accessed April 18, 2022.

*c. Would the project in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Livermore is an urbanized area with the following applicable visual character/quality Goals and Policies in the Livermore General Plan Land Use and Community Character Element:

***Land Use Element***

- **Goal LU-1:** Protect the unique qualities of Livermore, which include a historic Downtown, a variety of residential neighborhoods, vineyards, ranches, natural habitats and open space.
- **Objective LU-1.3:** Utilize the transferring of density in order to preserve environmentally and aesthetically sensitive areas.[18]

***Community Character Element***

- **Goal CC-1:** Preserve and enhance Livermore's natural setting.
- **Objective CC-1.1:** Use open space to protect and enhance local community character and identity, to preserve rural characteristics, and to provide an edge to urban growth.
- **Objective CC-1.2:** The intensity of land use in woodland areas shall reflect the density of the trees so as to perpetuate the woodland character.
- **Objective CC-1.3:** Minimize obtrusive glare and wasted energy from excessive nighttime lighting and preserve views of the nighttime sky.
- **Goal CC-2:** Maintain high standards of urban design in Livermore.
- **Goal CC-4:** Protect and enhance public views within and from established scenic routes, including views of arroyos.
- **Objective CC-4.16:** Preserve and enhance natural scenic qualities in areas beyond scenic routes.[19]

The CAP Update would promote sustainable infrastructure development and redevelopment through strategies and actions related to the building energy, transportation, solid waste, and water sectors. Implementation of some CAP Update actions related to transportation and renewable energy may alter the visual setting of future project sites and could impact visual character and scenic quality. Specifically, CAP Update Strategies E-1, B-2, and M-1 promote installation of microgrid projects, such as rooftop solar panels, and associated battery energy storage systems and CAP Update Strategies T-1 through T-3 encourage improvements to the multimodal and public transit systems and the installation of EV charging stations.

Implementation of small-scale solar panels and battery storage and introduction of EV charging, public transit and bike and pedestrian infrastructure may slightly change the scenic character of the Livermore community. However, future CAP Update-related projects would be located and designed to be complimentary to existing land uses and would be required to adhere to the City regulations described under *Responses 1a. and b.*, above, that seek to preserve the character of Livermore and minimize environmental impacts. In addition, the CAP Update contains strategies and actions to

[18] Livermore, City of. 2003. General Plan Land Use Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/5557/637643621508500000>. Accessed April 19, 2022.

[19] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1379/637643622125630000>. Accessed April 19, 2022.

increase the planting of trees, add new green stormwater infrastructure such as wetlands, increase greenspace in the community, and preserve open space, which would positively contribute to the visual environment in Livermore and align with General Plan goals and objectives such as Goal CC-1, and Objective CC-1.2. Finally, CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan policies highlighted above and other applicable regulatory land use actions prior to approval. Therefore, the CAP Update would not conflict with applicable zoning and other regulations governing scenic quality and would result in a ***less than significant impact***.

*d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?*

The CAP Update would promote sustainable infrastructure development and redevelopment that is complimentary to existing development and land uses. As a policy document, the CAP Update would not directly result in impacts related to light and glare. However, implementation of CAP Strategies E-1, B-2, M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems throughout Livermore. These Strategies emphasize placement of microgrid and battery storage systems in locations such as municipal buildings, hospitals, fire and police stations, and residential buildings. Solar panels have the potential to result in new sources of glare within Livermore if not thoughtfully designed and located. However, the design and location of proposed solar infrastructure would be complimentary to existing development, such as the addition of small-scale rooftop solar panels to reduce potential glare impacts. Furthermore, CAP Update projects and actions would be reviewed for consistency with the CCR Title 24 lighting standards (CCR Title 24 Part 6) and Livermore Design Standards and Guidelines, and undergo design review by the Planning Commission or Administrative Design Review by the Planning Division as applicable.[20,21,22] In addition, CAP Update projects or actions would be reviewed for consistency with the Livermore General Plan and other applicable regulatory land use actions prior to approval. Compliance with these regulations would minimize environmental impacts related to light and glare by limiting the use of highly reflective materials and requiring the shielding of exterior lighting. Thus, the CAP Update would result in a ***less-than-significant impact*** related to light and glare.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Cumulative impacts related to scenic resources, visual character, and increased light and glare would generally be site-specific, and cumulative projects are not anticipated to contribute to cumulative aesthetic impacts with adherence to Livermore General Plan policies, the LMC, and the Livermore Design Standards and Guidelines. Because of the developed nature of Livermore, future infrastructure projects under the CAP Update, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would not adversely impact the visual character of the Livermore community. In addition, future development in Livermore would be required to comply with the City's Design Review process and be reviewed against applicable Livermore General Plan policies and City's design standards for

[20] California Energy Commission (CEC). 2019. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Available: <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf>. Accessed April 18, 2022.
21 Livermore, City of. 2004. Design Standards and Guidelines. Available: <https://www.cityoflivermore.net/government/community-development/planning/design-standards-and-guidelines>. Accessed April 18, 2022.
22 Livermore, City of. 2009. Design Review. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1007/637175931583270000>. Accessed April 18, 2022.

design quality and compatibility with adjacent land uses. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to aesthetics.

# 2 Agriculture and Forestry Resources

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ■ | ☐ |
| b. Conflict with existing zoning for agricultural use or a Williamson Act contract? | ☐ | ☐ | ■ | ☐ |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? | ☐ | ☐ | ☐ | ■ |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ■ |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ■ | ☐ |

*a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

*b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*

*e.1. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

Livermore is characterized primarily by urban and suburban development. However, Livermore contains a few scattered pockets of farmland in the northwest and several vineyards in the southwestern portion of the city. In addition, there are vineyards and orchards to the south and southeast of Livermore, as well as areas of grazing land to the north, east, and south of Livermore in unincorporated Alameda County. The California Farmland Mapping and Monitoring Program classifies the majority of Livermore as urban and built-up land not suitable for farming, with the vineyards and scattered agricultural areas in Livermore identified as a mix of Prime Farmland,

Farmland of Statewide Importance, and Unique Farmland.[23] Livermore contains properties under Williamson Act contract in its northwest and southeast portions. Areas of unincorporated Alameda County surrounding Livermore, particularly to the north, east, and south, include vineyards, orchards, grazing land and passive open space, some of which include Williamson Act contracts.[24] The Livermore General Plan Land Use Element contains goals, objectives, and policies related to the protection and preservation of agricultural resources, such as:

- **Objective LU-5.1**:aintain an urban growth boundary to protect open space and agricultural uses in North Livermore.
- **Goal LU-14**: protect, enhance, and increase viticulture and other cultivated agriculture within Livermore.
- **Objective LU-15.1**: permanently protect agricultural lands in the South Livermore Valley.[25]

The majority of CAP Update strategies and actions focus on electrification of buildings, improving active and public transportation, EV infrastructure, grid decarbonization, and water use and waste reduction. These CAP Update strategies and actions would primarily involve activities in the urbanized portions of Livermore and would not involve projects that would result in impacts related to conversion or loss of farmland or a conflict with Williamson Act contracts. However, CAP Update Action S-1.2 would seek to support carbon farming on agricultural lands that could in turn affect farming operations within Livermore. Common agricultural uses, including driving a tractor, tilling the soil, over-grazing, using fossil fuel-based fertilizers, pesticides and herbicides result in $CO_2$ release. Alternatively, carbon can be stored long term (decades to centuries or more) beneficially in soils in a process called soil carbon sequestration. Carbon farming involves implementing practices, such as applying compost, that are known to improve the rate at which carbon dioxide is removed from the atmosphere and converted to plant material and/or soil organic matter. Physical implementation of carbon farming could include compost application on existing agricultural and grazeland areas. As such, carbon farming could result in minor disruption to the use of agricultural lands. However, carbon farming would be beneficial to agricultural uses, because it can help increase rangeland and crop productivity and ensure those existing agricultural uses in Livermore remain in use rather than be converted to non-agriculture uses or result in the loss of agricultural lands.

In addition, the CAP Update includes Action S-1.4 to preserve open space uses, including rangelands and passive agriculture, and Action T-4.2 to maximize infill development that would encourage preservation of open spaces and agricultural land surrounding Livermore while concentrating development in the central, urbanized areas. CAP Update actions would not involve projects or policies that would result in impacts related to conversion or loss of farmland. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to conversion of agricultural land to non-agriculture uses and conflicts with existing zoning, Williamson Act contracts, and Livermore General Plan land use designations.

[23] California Department of Conservation. 2022. California Important Farmland Finder Map. Available: <https://maps.conservation.ca.gov/dlrp/ciff/>. Accessed April 18, 2022.

[24] Livermore, City of. 2003. Livermore General Plan Update Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <http://dev.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?blobid=23819>. Accessed April 14, 2022.

[25] Livermore, City of. 2003. General Plan Land Use Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/5557/637643621508500000>. Accessed April 19, 2022.

*c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

*d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

*e.2. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use?*

Livermore is primarily urbanized, and forested areas are limited to riparian corridors along arroyos and the higher elevation slopes near the northern and eastern boundaries.[26] Livermore does not contain areas designated for forest land or Timberland Production.[27] LMC Chapter 12.20, Street Trees and Tree Preservation, establishes policies, regulations, and standards to ensure tree protection within Livermore.[28] In addition, the Livermore General Plan contains a number of goals, objectives, and policies such as Objective OSC-1.2, minimize impacts to riparian vegetation and woodland forest, that illustrate the City's commitment to managing and preserving Livermore's urban forest.

The CAP Update aligns with the Livermore General Plan by including strategies and actions such as Actions F-1.6, H-1.2, S-1.1, and S-1.3 that seek to facilitate increased tree canopy throughout Livermore. As such, the CAP Update would increase planting of trees within Livermore and be consistent with the Livermore Tree Preservation Regulations and General Plan. The CAP Update does not include actions that would result in the loss of forest land or the conversion of forest land to non-forest use, nor would it conflict with or cause the rezoning of forest, timber land, or Timberland Production areas. Therefore, the CAP Update would result in a ***no impact*** related to degradation of forestry resources or conversion of forest land to non-forest uses, nor would there be a conflict with existing zoning or Livermore General Plan land use designations.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. As the Livermore population grows and development intensifies in the future, in combination with other cumulative projects anticipated under Livermore General Plan buildout, CAP Update Actions S-1.4 and T-4.2 would encourage the protection of open space and passive agricultural uses and the concentration of development within the urbanized areas of Livermore, while Actions F-1.6, H-1.2, S-1.1, and S-1.3 would ensure that the urban forest is maintained and that additional trees are planted throughout Livermore. As discussed above, the CAP Update would not include any strategies or actions that would significantly impact agricultural or forest resources. In addition, the CAP Update would not involve land use or zoning changes that could result in cumulative impacts related to conversion or loss of farmland or forest land.

[26] Livermore, City of. 2003. General Plan Conservation and Open Space Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

[27] Livermore, City of. 2022. Zoning Map. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/8701/637825898811970000>. Accessed April 19, 2022.

[28] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.20. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=744&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=2&hits=1357+1358+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed April 19, 2022.

Therefore, implementation of CAP Update would result in a ***less-than-significant cumulative impact*** related to agricultural and forestry resources.

# 3 Air Quality

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☐ | ■ |
| b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | ☐ | ☐ | ■ | ☐ |
| c. Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ■ | ☐ |
| d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | ☐ | ☐ | ☐ | ■ |

*a. Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The federal Clean Air Act (CAA) governs air quality in the United States and is administered by the U.S. EPA at the federal level. The Federal Clean Air Act Amendments (CAAA) mandate that states submit and implement a State Implementation Plan (SIP) for areas not meeting air quality standards. The SIP includes pollution control measures to demonstrate how the standards will be met through those measures. The SIP is established by incorporating measures established during the preparation of Air Quality Management Plans (AQMP) and adopted rules and regulations by each local Air Pollution Control District (APCD) and AQMD, which are submitted for approval to CARB and the U.S. EPA.[29] The goal of an AQMP is to reduce pollutant concentrations below the NAAQS through the implementation of air pollutant emissions controls.

Air quality in California is also governed by regulations under the California CAA, which is administered by CARB at the State level. At the regional and local levels, local air districts typically administer the federal and California CAA. As part of implementing the federal and California CAA, the U.S. EPA and CARB have established ambient air quality standards for major pollutants at thresholds intended to protect public health. Livermore is located within the San Francisco Bay Area Air Basin (the Air Basin), which includes the nine Bay Area counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma). The Air Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

As the local air quality management agency, BAAQMD is required to monitor air pollutant levels to ensure that State and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether or not the standards are met or exceeded,

[29] CARB. 2017. Revised Proposed 2016 State Strategy for the State Implementation Plan. Available: <https://ww3.arb.ca.gov/planning/sip/2016sip/2016sip.htm>. Accessed May 16, 2022.

the Air Basin is classified as being in "attainment" or "nonattainment." Under State law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-attainment. BAAQMD is in non-attainment for the State and federal ozone standards, the State and federal $PM_{2.5}$ (particulate matter up to 2.5 microns in size) standards, and the State $PM_{10}$ (particulate matter up to 10 microns in size) standards and is required to prepare a plan for improvement.[30] The sources, health effects, and typical controls associated with criteria pollutants are described in Appendix A.

The Bay Area 2017 Clean Air Plan provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the Clean Air Plan is to update the most recent ozone plan, the 2010 Clean Air Plan, to comply with State air quality planning requirements as codified in the California Health and Safety Code. Although steady progress has been made toward reducing ozone levels in the Bay Area, the region continues to be designated as non-attainment for both the one-hour and eight-hour State ozone standards as noted previously. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. Under these circumstances, State law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and reduce transport of ozone precursors to neighboring air basins.[31]

The 2017 Clean Air Plan focuses on two paramount goals:

- Protect air quality and health at the regional and local scale by attaining all state and national air quality standards and eliminating disparities among Bay Area communities in cancer health risk from toxic air contaminants (TACs); and
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Clean Air Plan should demonstrate that a project:

- Supports the primary goals of the 2017 Clean Air Plan;
- Includes applicable control measures from the 2017 Clean Air Plan; and
- Would not disrupt or hinder implementation of any control measures in the 2017 Clean Air Plan.[32]

The CAP Update includes a suite of strategies and actions that would reduce natural gas use and VMT and increase the use of EVs, active transportation, and public transit within Livermore. The primary purpose and intended effect of the CAP Update is to reduce GHG emissions generated in Livermore to help reduce the effects of climate change, which aligns with goal of the 2017 Clean Air Plan to protect the climate and reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030. In addition, many of the CAP Update strategies and actions would also reduce criteria pollutant emissions. CAP Update Strategies B-1 and M-2 involve increased energy efficiency and building electrification and CAP Update Strategies T-1 through T-4, M-3, and Action B-2.4 seek to

[30] Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. Available: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>. Accessed April 19, 2022.

[31] BAAQMD. 2017. Final Clean Air Plan: Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan. Available: <http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en>. Accessed April 19, 2022.

[32] ibid

reduce VMT in and through Livermore, improve active transportation and public transit facilities, and increase the adoption of zero emission vehicles. These energy- and transportation-related measures would reduce air pollutant emissions and align with the goal of the 2017 Clean Air Plan to improve air quality in the Bay Area, meet State and national air quality standards, and reduce exposure of sensitive receptors to TACs. Furthermore, the CAP Update does not contain any policies that would conflict with or hinder implementation of any control measures in the 2017 Clean Air Plan. Therefore, the CAP Update is consistent with the 2017 Clean Air Plan and would have ***no impact*** related to a conflict with or obstruction of the applicable air quality plan.

*b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?*

The CAP Update would promote sustainable infrastructure development and redevelopment. As policy documents, the CAP Update would not result in impacts related to criteria pollutants. However, implementation of the following CAP Update strategies and actions may promote construction activities that would temporarily generate criteria pollutants during the construction phase.

CAP Update Strategies E-1, B-2, and M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems at both municipal facilities and in private development to provide greener renewable electricity. CAP Update Actions F-1.2, F-1.3, and M-4.3 would result in new green stormwater infrastructure projects in Livermore including wetland restoration, bioswales, passive rain capture systems, and replacement of impermeable pavement with permeable surfaces. CAP Update Actions F-1.6, H-1.2, S-1.1, and S-1.3 would seek to plant additional trees throughout Livermore. CAP Update Strategies B-1 and M-2 and Action I-2.2 promote electrification and energy efficiency upgrades to existing buildings. CAP Update Strategy T-1 and Actions B-2.4 and M-3.2 would result in the construction of new EV and alternative-fuel vehicle infrastructure throughout Livermore. CAP Update Action T-2.1 may include an installation of a new electric trolley service and Strategy T-3 would add new bicycle and pedestrian infrastructure throughout Livermore. CAP Action S-1.5 may include construction of a carbon capture and storage facility or climate restoration pilot project. Implementation of these strategies and actions would involve temporary construction activities.

Construction-related air quality impacts are generally associated with fugitive dust/particulate matter (specifically, $PM_{10}$ and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to reactive organic gases (ROG) that would be released during the drying phase upon application of architectural coatings. However, implementation of proposed CAP Update strategies would not include large-scale construction within Livermore and would involve temporary and short-term criteria pollutant emissions. As such, the CAP Update would result in low-level criteria pollutant emissions and negligible impacts to air quality. Future CAP Update projects would also be reviewed for consistency with BAAQMD air quality regulations and other applicable local, State, and federal regulations once project details and locations are known. Thus, the construction required for implementation of the CAP Update would result in a less-than-significant impact related to the net increase of criteria pollutants.

With respect to operational emissions, many of the CAP Update actions would have the secondary benefit of reducing criteria pollutant emissions, such as CAP Strategies B-1, M-2, and T-1 through T-4, which include measures aiming to increase building energy efficiency and electrification, promote

EV and zero emission vehicle adoption, and reduce VMT. Implementation of the CAP Update would be beneficial by helping Livermore meet applicable air quality plan goals. In addition, future CAP Update projects would be required to comply with local, regional, and State air quality regulations. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to criteria pollutant emissions.

*c. Would the project expose sensitive receptors to substantial pollutant concentrations?*

Implementation of the CAP Update strategies and actions as described under *Response 3b.*, above, promote infrastructure development and redevelopment that may result in temporary construction activities. Construction-related air quality impacts are generally associated with $PM_{10}$ and $PM_{2.5}$ and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to ROG that would be released during the drying phase upon application of architectural coatings. However, implementation of CAP Update strategies and actions would not include large-scale construction, and construction-related emissions would be minor and temporary. As such, implementation of the CAP Update would result in low-level toxic air contaminant emissions associated with construction.

While the CAP Update could result in construction-related impacts related to toxic air contaminants and exposure to sensitive receptors, CAP Update projects or actions would be reviewed for consistency with BAAQMD air quality regulations and other applicable local, State, and federal regulations once project details and locations are known to ensure compliance. Thus, construction associated with implementation of the CAP Update would not result in substantial emissions of toxic air contaminants and exposure to sensitive receptors. No operational toxic air contaminant emissions are anticipated with implementation of the CAP Update strategies and actions. Therefore, the CAP Update would have a ***less-than-significant impact*** related to exposure of sensitive receptors to toxic air contaminants.

*d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

The CARB 2005 *Air Quality Land Use Handbook: A Community Health Perspective* identifies land uses associated with odor complaints which include: sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, auto body shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations.[33] CAP Update Strategy W-1 encourages increased organic waste diversion and CAP Action S-1.2 promotes carbon farming, as described in Section 2, *Agriculture and Forestry Resources*. As such, the CAP could result in minor odors related to organic waste processing and compost application. However, the design and location of future projects related to new or expanded organic waste collection and processing and carbon farming would be complimentary to existing development in the city and would be reviewed for potential odor impacts to ensure that projects implemented in accordance with the CAP and GPCE would not adversely affect a substantial number of people. Therefore, the CAP Update would not facilitate development that could create adverse odors, and there would be ***no impact*** related to odors exposure.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs

[33] California Air Resources Control Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available: <https://ww3.arb.ca.gov/ch/handbook.pdf>. Accessed April 28, 2022.

projections through 2030 and 2045. The CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, could exceed applicable BAAQMD thresholds or be inconsistent with the 2017 Clean Air Plan. However, implementation of the CAP Update would have a less-than-significant contribution related to potential cumulative air quality impacts within the air basin and on sensitive receptors within Livermore, given that the CAP Update would result in community-wide reductions of GHG emissions, air pollutant emissions from vehicle use, energy use, water use, and waste generation. As such, implementation of the CAP Update would not result in adverse impacts related to contribution of criteria pollutants to the air basin and exposure of sensitive receptors to toxic air contaminants. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to air quality.

# 4 Biological Resources

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☐ | ☐ | ■ | ☐ |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☐ | ☐ | ■ | ☐ |
| c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☐ | ■ | ☐ |
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☐ | ☐ | ■ |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ■ |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan? | ☐ | ☐ | ☐ | ■ |

*a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

Livermore is a primarily urbanized community with neighborhood parks, community parks, and recreational and open spaces located throughout Livermore. LMC Chapter 12.20 and the Livermore General Plan Open Space and Conservation Element incorporate goals and policies to protect biological resources, such as plants, trees, wildlife habitats, wetlands and rivers, and rare and endangered species in Livermore.[34, 35] There is no mapped critical habitat for threatened and endangered species within Livermore, but critical habitat for California red-legged frog, California tiger Salamander, and vernal pool fairy shrimp exist in undeveloped areas near Livermore northern, eastern, and southern boundaries.[36]

The CAP Update would instead promote sustainable infrastructure development and redevelopment. The CAP Update strategies and actions would not conflict with the LMC or objectives and policies of the Livermore General Plan related to wildlife but would rather be consistent with and promote those policies. CAP Update strategies and actions would generally apply to the urbanized areas of Livermore, with little application to parks, open spaces area, or the undeveloped portions outside of Livermore boundaries where sensitive habitat and related species may be present. In addition, CAP Update Action F-1.1 would include wetland restoration and Actions H-1.2, S-1.1, and S-1.3 facilitate increased tree canopy and landscaping throughout Livermore that could serve as additional habitat for special status species and migratory and nesting birds. Furthermore, CAP Update Action S-1.4 would seek to preserve open space in Livermore that may serve as habitat for wildlife. As such, the CAP Update would not have a substantial adverse effect on candidate, threatened, or endangered wildlife species either directly through individual take or indirectly through species habitat modification.

As a policy document, the CAP Update would not directly result in impacts related to wildlife species of special status. However, implementation of some CAP Update actions may promote infrastructure development within the urbanized portions of Livermore and could result in impacts to species through construction activities. CAP Update Strategies E-1, B-2, and M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems at both municipal facilities and in private development to provide greener renewable electricity. CAP Update Actions F-1.2, F-1.3, and M-4.3 would result in new green stormwater infrastructure projects in Livermore including wetland restoration, bioswales, passive rain capture systems, and replacement of impermeable pavement with permeable surfaces. CAP Update Actions F-1.6, H-1.2, S-1.1, and S-1.3 would seek to plant additional trees throughout Livermore. CAP Update Strategies B-1 and M-2 and Action I-2.2 promote electrification and energy efficiency upgrades to existing buildings. CAP Update Strategy T-1 and Actions B-2.4 and M-3.2 would result in the construction of new EV and alternative-fuel vehicle infrastructure throughout Livermore. CAP Update Action T-2.1 may include an installation of a new electric trolley service and Strategy T-3 would add new bicycle

[34] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.20. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=744&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=2&hits=1357+1358+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed April 19, 2022.

[35] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

[36] U.S. Fish and Wildlife Service (USFWS). 2022. Critical Habitat for Threatened and Endangered Species Map. Available: <https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>. Accessed April 20, 2022.

and pedestrian infrastructure throughout Livermore. CAP Action S-1.5 may include construction of a carbon capture and storage facility or climate restoration pilot project.

Implementation of these strategies and actions would involve temporary construction activities that have the potential to disturb nesting habitat for birds and raptors protected under Sections 3503, 3503.5, and 3513 of the California Fish and Game Code (CFGC) and under the Migratory Bird Treaty Act (MBTA). However, construction activities for future CAP Update projects would be required to comply with the provisions of the MBTA and CFGC Sections 3503, 3503.5, and 3513 in order to avoid impacts to protected birds and would be reviewed for consistency with City, State, and federal policies related to protected species. As such, the CAP Update would not have a substantial adverse effect on special-status wildlife species. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to special-status wildlife species.

*b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

*c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

According to the Livermore General Plan Open Space and Conservation Element, Arroyo del Valle and Arroyo Mocho provide riparian corridors within Livermore. Other special habitat resources in Livermore include streams, wetlands, alkali springs, and vernal pools, although these habitats are limited due to the developed nature of Livermore. The Livermore General Plan Open Space and Conservation Element contains:

- **Goal OSC-1**:Conserve the value and function of open spaces within Livermore as a biological resource
- **Objective OSC-1.2**: Protect sensitive natural habitats including wetlands and riparian habitat
- **Goal OSC-2**: Conserve Livermore's waterways and associated riparian habitat.[37]

The CAP Update strategies and actions would generally apply to the urbanized areas of Livermore, with little application to parks, open spaces area, or other locations where riparian and wetland habitat is located. CAP Update Action F-1.1 would include wetland restoration and Actions H-1.2, S-1.1, and S-1.3 facilitate increased tree canopy and landscaping throughout Livermore. Furthermore, CAP Update Action S-1.4 would seek to preserve open space in Livermore that may contain sensitive habitats such as riparian corridors and wetlands. These actions align with the Livermore General Plan goals to protect and enhance special habitats within Livermore as a biological resource. In addition, future CAP Update-related projects would be required to adhere to City development regulations and Livermore General Plan policies, including the City of Livermore Street Tree and Tree Preservation Ordinance, to retain urban forestry and minimize environmental impacts.[38] In addition, the location and details of future CAP Update projects would be reviewed for consistency with applicable local, regional, and State regulations related to sensitive habitat prior to approval. As

[37] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

[38] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.20. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=744&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=2&hits=1357+1358+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed April 19, 2022.

such, the CAP Update would not have a substantial adverse effect on riparian habitat or sensitive natural community, such as wetlands. Therefore, the CAP Update would have a ***less-than-significant impact*** related to sensitive natural plant communities.

*d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

According to the Livermore General Plan Open Space and Conservation Element, arroyos and associated riparian corridors within Livermore may serve as movement corridors and migratory stopovers for many species, as well as habitat for aquatic species. Arroyos within Livermore also connect to open space areas within and beyond Livermore limits, which further enhances their importance for wildlife movement.[39]

The CAP Update would promote sustainable infrastructure development and redevelopment within urbanized portions of Livermore. CAP Update projects would not involve components that harm Livermore's arroyos. Rather, the CAP Update includes Action F-1.1 that would revitalize urban creeks and flood plains and promote local programs such as Living Arroyos and Action S-1.4 to conserve open space within Livermore, which would enhance and protect Livermore's arroyos and open space areas that may serve as migratory corridors or nurseries. Future CAP Update projects would also be required to adhere to City development regulations and Livermore General Plan policies, and would be reviewed for consistency with applicable local, regional, and State regulations to retain biological resources and minimize environmental impacts. Therefore, the CAP Update would result in ***no impact*** related to interference with species movement or wildlife nursery use.

*e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Livermore is a primarily urbanized community with neighborhood parks, community parks, and recreational spaces throughout Livermore. LMC Chapter 12.20 and the Livermore General Plan Open Space Element and Conservation Element incorporate goals and policies to protect biological resources, such as plants, trees, wildlife habitats, wetlands and rivers, and rare and endangered species in Livermore.[40, 41]

The CAP Update would promote sustainable infrastructure development and redevelopment within the urbanized portion of Livermore. The purpose and intended effect of the CAP Update is to decrease GHG emissions generated in Livermore and build communitywide resilience to help reduce the effects of climate change. Implementation of proposed CAP Update actions would be beneficial by helping Livermore meet applicable local policies and ordinances for protecting biological resources, including the General Plan Open Space and Conservation Element and LMC Chapter 12.20. Specifically, CAP Update Action F-1.1 would include stream and wetland restoration and protection and Actions H-1.2, S-1.1, and S-1.3 facilitate increased tree canopy and landscaping throughout Livermore that serve as habitat. Furthermore, CAP Update Action S-1.4 would seek to

[39] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

[40] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.20. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=744&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=2&hits=1357+1358+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed April 19, 2022.

[41] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

preserve open space in Livermore, an important biological resource. As such, the CAP Update would not conflict with or obstruct implementation of the applicable policies for preserving biological resources and would not affect the City's ability to attain goals and policies that protect biological resources. Therefore, the CAP Update would result in ***no impact*** related to consistency with local biological resources protection policies.

*f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?*

No portion of Livermore is currently subject to a Habitat Conservation Plan or Natural Community Conservation Plan, although a Habitat Conservation Plan is currently under development as part of the Aramis Renewable Energy Project within unincorporated Alameda County approximately 5,000 feet to the northwest of Livermore boundaries.[42, 43] LMC Chapter 12.20 and the Livermore General Plan Open Space and Conservation Element incorporate goals and policies to protect natural resources, such as plant and wildlife habitats in Livermore.[44, 45] The CAP Update would not facilitate specific development projects, nor would it add or enable new development that would conflict with the LMC, Livermore General Plan, or the future Aramis Renewable Energy Habitat Conservation Plan. Rather, the CAP Update prioritizes the preservation of open space and sensitive habitat with Livermore and improvements to buildings, renewable energy generation and storage, waste reduction, carbon sequestration, and the transportation system in order to reduce GHG emissions and related impacts to the environment. Therefore, the CAP Update would have ***no impact*** related to consistency with an adopted habitat or natural community conservation plan.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Implementation of CAP Update projects, in combination with other cumulative projects anticipated under General Plan buildout, could result in impacts to biological resources during infrastructure construction. However, as described in *Responses 4a.* through *4f.*, above, infrastructure development or redevelopment resulting from implementation of the CAP Update would be required to comply with applicable Livermore General Plan policies and State and federal regulatory requirements regarding avoidance of special wildlife species and habitat. In addition, the CAP Update would not result in new building construction and contains actions that prioritize the preservation of trees and open space and improvements to streams, wetlands, and riparian habitat within Livermore. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to biological resources.

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[42] California Department of Fish and Wildlife (CDFW). 2019. Natural Community Conservation Plan Summaries. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline>. Accessed April 28, 2022.

[43] Intersect Power. 2021. Intersect Power to Implement Habitat Conservation Plan at Aramis Renewable Energy Project in North Livermore. Available: <https://www.intersectpower.com/intersect-power-to-implement-habitat-conservation-plan-at-aramis-renewable-energy-project-in-north-livermore/>. Accessed April 28, 2022.

[44] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.20. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=744&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=2&hits=1357+1358+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed April 19, 2022.

[45] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

# 5 Cultural Resources

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? | ☐ | ☐ | ■ | ☐ |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☐ | ☐ | ■ | ☐ |
| c. Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ■ | ☐ |

*a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

The Livermore Historic Resources Survey Update identifies six properties that are designated as historical resources, 30 properties that appear to be eligible for listing as historical resources in the National Register and California Register, 14 properties that contribute to a historical district that appears to be eligible for listing as a historical resource in the National Register and California Register, 22 properties that appear to be eligible for listing as a local historical resource, and an additional 216 properties that are potential historic resources.[46] The General Plan Community Character Element includes goals and policies for the protection of cultural resources, including Goal CC-3 to preserve and enhance Livermore's cultural and historic resources and Objective CC-3.1 to establish and maintain a preservation program for cultural and paleontological resources.[47] In addition, Livermore Development Code Chapter 9.02 and Chapter 9.13 establish requirements for the preservations of historical resources within Livermore.[48, 49]

The CAP Update would promote infrastructure development and redevelopment that would be complimentary to existing development. CAP Update projects would be required to comply with Livermore General Plan Community Character goals, policies, and programs and Livermore Development Code Chapter 9.02 for the preservation of historical resources. These programs require the identification and protection of sites and structures within Livermore of architectural, historical, archaeological, and cultural significance and the review and approval of projects with the potential to impact historical resources by the Historic Preservation Commission. This includes sites,

[46] Livermore, City of. 2021. Historic Resources Survey Update. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7622/637635147928700000#:~:text=The%20City%20of%20Livermore%20Historic,closures%20and%20restrictions%20on%20gathering.>. Accessed April 28, 2022.

[47] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7289/637587704118730000>. Accessed April 28, 2022.

[48] Livermore, City of. 2022. Livermore Development Code Chapter 9.02. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

[49] Livermore, City of. 2022. Livermore Development Code Chapter 9.13. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

structures, and areas that are associated with a historic event, activity, or persons that contribute to the historic character of districts, neighborhoods, landmarks, historic structures, and artifacts. CAP Update projects and actions would be reviewed for compliance with applicable local, regional, and State regulations regarding cultural resources and the Livermore General Plan Community Character Element to avoid adverse impacts to historical resources. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to historical resources.

*b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

The Livermore General Plan Community Character Element acknowledges that the Livermore-Amador Valley has been inhabited for 6,000 to 12,000 years, and there may be scattered archeological sites throughout Livermore. Known archaeological sites in the area have been primarily concentrated along creeks and streams and that there are likely to be additional areas of buried archaeological resources that have not been previously identified, especially in areas near water features.[50] Hence, there is a possibility for archaeological sites not previously recorded to be present in areas where CAP Update projects could occur. In particular, CAP Update Strategies E-1, B-1, B-2, T-1, T-3, M-1, and M-2 and Actions F-1.2, F-1.3, F-1.6, H-1.2, S-1.1, S-1.3, S-1.5, I-2.2, B-2.4, M-3.2, M-4.3, and T-2.1 would result in small-scale construction that may expose previously undiscovered archaeological resources during ground disturbing activities. In addition, CAP Update Action F-1.1 may include stream and wetland restoration activities, which could involve ground disturbance in areas known to be sensitive for archaeological resources.

The CAP Update projects would be located and designed strategically to reduce ground disturbance to the maximum extent possible. In addition, CAP Update projects and actions would be reviewed for consistency with applicable local, regional, and State archeological regulations prior to final siting and construction and would be required to comply with the Livermore General Plan Community Character Element Goal CC-3 and its associated policies and programs and Livermore Development Code Chapter 9.02 and Chapter 9.13.[51, 52, 53] These policies include a requirement for archaeological testing and monitoring for projects in areas when there is evidence of archaeological resources and a requirement during all ground disturbing activities that if potential archaeological resources are unearthed, construction must be halted and a qualified professional must be hired to investigate and make recommendations. As such, archeological resources would be protected prior to and/or upon discovery and, thus, impacts would be reduced to a minimal level. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to archaeological resources.

*c. Would the project disturb any human remains, including those interred outside of formal cemeteries?*

There is a possibility of encountering unknown buried human remains throughout Livermore where CAP Update projects could occur. CAP Update Strategies E-1, B-1, B-2, T-1, T-3, M-1, and M-2 and Actions F-1.1, F-1.2, F-1.3, F-1.6, H-1.2, S-1.1, S-1.3, S-1.5, I-2.2, B-2.4, M-3.2, M-4.3, and T-2.1 would

[50] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7289/637587704118730000>. Accessed April 28, 2022.

[51] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7289/637587704118730000>. Accessed April 28, 2022.

[52] Livermore, City of. 2022. Livermore Development Code Chapter 9.02. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

[53] Livermore, City of. 2022. Livermore Development Code Chapter 9.13. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

result in small-scale construction that may expose unknown human burial sites ground disturbing activities. CAP Update projects and actions would be reviewed for compliance with applicable local, regional, and State regulations regarding cultural resources and human remains to avoid impacts related to unknown human interments. In addition, CAP Update projects would be required to comply with State coroner requirements related to burial findings, including assessment and mitigation incorporation once project details and locations are known. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to human remains.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Implementation of the CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would include infrastructure that could have an impact on cultural resources during construction. Additionally, there is a possibility of encountering buried archaeological deposits and human remains throughout Livermore. Impacts to historic and archaeological resources and human remains are generally site-specific. Accordingly, potential impacts associated with cumulative developments would be addressed on a case-by-case basis. In addition, future projects in Livermore, including those associated with implementation of the CAP Update, would be required to comply with the Livermore General Plan Community Character Element policies and programs and Livermore Development Code Chapters 9.02 and 9.13 that require the identification and protection of sites and structures of architectural, historical, archaeological, and cultural significance in order to avoid impacts related to cultural resources. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to cultural resources.

# 6 Energy

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | ☐ | ☐ | ☐ | ■ |
| b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | ☐ | ☐ | ☐ | ■ |

*a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

California is the second lowest per-capita energy user in the United States due to its energy efficiency programs and mild climate.[54] California consumed approximately 279,510 gigawatt-hours (GWh) of electricity and 12.3 billion therms of natural gas in 2020.[55,56] The single largest end-use sector for energy consumption in California is transportation (39.3 percent), followed by industry (23.2 percent), commercial (18.8 percent), and residential (18.7 percent).[57] Adopted in 2018, SB 100 accelerates the State's Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

The City of Livermore has demonstrated its commitment to energy efficiency and renewable energy through many efforts, as described in the *Existing Sustainability Setting* section above. The City has adopted the California Green Building Standards Code, pursuant to LMC Chapter 15.26, that requires efficiency measures to reduce energy use, and provide energy reduction benefits.[58] In addition, the City authorized the EBCE Community Choice Aggregation in 2018 to provide renewable energy to residents and businesses in Livermore. The City has also completed a communitywide GHG emissions inventory for 2017, which is summarized in Table 1. Transportation (specifically on-road passenger and commercial vehicles) and building energy use (specifically residential and

[54] U.S. Energy Information Administration. 2022. "California - Profile Overview." Last modified: March 17, 2022. Available: <https://www.eia.gov/state/?sid=CA> Accessed April 29, 2022.

[55] California Energy Commission (CEC). 2020. Electricity Consumption by County. Available: <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed April 29, 2022.

[56] CEC. 2020. Gas Consumption by County. Available: <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed April 29, 2022.

[57] U.S. Energy Information Administration. 2022. "California - Profile Overview." Last modified: March 17, 2022. Available: <https://www.eia.gov/state/?sid=CA> Accessed April 29, 2022.

[58] Livermore, City of. 2022. Livermore Municipal Code Chapter 15.26. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 29, 2022.

commercial electricity and natural gas use) were responsible for the most GHG emissions within the Livermore community in 2017. Passenger and commercial vehicles in Livermore accounted for 635,756,953 vehicle miles traveled (VMT) in 2017. Residential, non-residential, and direct access electricity use in Livermore totaled 526,411,262 kWh in 2017. Residential and non-residential natural gas use in Livermore totaled 23,228,982 therms in 2017.

The CAP Update is a policy document containing climate action strategies to reduce communitywide GHG emissions. The CAP Update would encourage energy efficiency in existing residential, commercial, and municipal building stock through new policies and educational campaigns as well as new requirements for proposed new and remodeled buildings through Strategies B-1 and M-2 and Action I-2.2. CAP Update Strategy B-1 also seeks to decrease natural gas consumption in new and existing buildings by requiring electrification. The CAP Update would also incentivize increased renewable energy production and storage within Livermore through Strategies E-1, B-2, and M-1. Additionally, the CAP Update would reduce transportation-related energy consumption by increasing active transportation and public transit use and reducing VMT through Strategies T-2, T-3, and T-4.

Implementation of some CAP Update strategies and actions involving physical projects would require small-scale construction. However, energy use for the construction of such projects would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of CCR Title 13 Sections 2449 and 2485, which would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency (USEPA) Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. Furthermore, per applicable regulatory requirements such as 2019 California's Green Building Standards Code (CALGreen), which is the CCR Title 24, Part 11, future infrastructure projects would comply with construction waste management practices to divert a minimum of 65 percent of construction and demolition debris. These practices would result in efficient use of energy necessary to construct CAP Update-related projects. Upon completion of construction for any CAP Update-related infrastructure development and redevelopment, non-renewable energy use would be reduced by increasing renewable energy production and storage, increasing building energy efficiency, and reducing VMT within Livermore.

The purpose and intended effect of the CAP Update is to reduce GHG emissions generated within the Livermore community to minimize the effects of climate change, including those emissions generated by energy demand and supply. The CAP Update would not result in the use of non-renewable resources in a wasteful or inefficient manner; rather, it would assist in reducing use of non-renewable energy resources and increasing the production of local renewable energy. Therefore, the CAP Update would result in ***no impact*** related to the wasteful, inefficient, or unnecessary consumption of energy.

*b. Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?*

Relevant plans and policies that aim to increase energy efficiency and the production of renewable energy include SB 100, the 2019 California Green Building Standards Code (CALGreen or Title 24 Part 11), and the 2019 California Building Energy Efficiency Standards (Title 24 Part 6). SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the California Renewables Portfolio Standard Program and requires electricity providers to increase procurement

from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. CALGreen (Title 24 Part 11) institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. In addition, the California Building Energy Efficiency Standards (Title 24 Part 6) establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. CCR Title 24 (Parts 6 and 11) is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Building Energy Efficiency Standards through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC.

Livermore is part of the EBCE community choice aggregate, which provides electricity primarily from clean, renewable sources. Livermore would continue to reduce its use of nonrenewable energy resources as the electricity generated by renewable resources provided by EBCE continues to increase to comply with State requirements through SB 100, which requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. The CAP Update includes Strategy B-2 to increase local renewable energy generation and decarbonize the electrical grid by opting EBCE accounts in Livermore to 100 percent renewable electricity by 2023. The CAP Update includes strategies and actions to reduce electricity use and improve energy efficiency, as discussed further below, and would therefore align with the overall intent of SB 100.

In addition, the City of Livermore has adopted CALGreen (Title 24 Part 11) and the California Building Energy Efficiency Standards (Title 24 Part 6) pursuant to LMC Chapter 15.26.[59] Therefore, construction and operation associated with infrastructure projects stemming from the CAP Update would be designed to comply with the energy source standards of the CALGreen and the California Building Energy Efficiency Standards. Future CAP Update projects would be required to demonstrate compliance with the CALGreen and the California Building Energy Efficiency Standards by implementing sustainability and energy efficiency measures such as high-efficiency lighting and HVAC systems, low-flow water fixtures, dual-paned windows, and water efficient landscaping and irrigation systems. Compliance with these regulations would minimize potential conflicts with adopted energy conservation plans

As discussed under *Response 6a*., above, Strategies B-1 and M-2 and Action I-2.2 seek to decrease natural gas and energy consumption in new and existing buildings by requiring electrification and incentivizing or requiring energy-efficient retrofits, while Strategies E-1, B-2, and M-1 encourage the production and storage of local renewable energy. These actions are consistent with the goals and policies established by SB 100, CALGreen, and the California Building Energy Efficiency Standards. Thus, the CAP Update would not conflict with adopted renewable energy or energy conservation plans, and there would be ***no impact***.

## Cumulative Impacts

For purposes of CEQA cumulative impacts analysis of the CAP Update, the cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Implementation of the CAP Update would result in reducing use of non-renewable energy resources across the community, particularly with retrofitted buildings and new infrastructure. Implementation of the CAP Update would also increase the production and

[59] Livermore, City of. 2022. Livermore Municipal Code Chapter 15.26. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 29, 2022.

storage of renewable energy within Livermore by incentivizing the inclusion of small-scale solar projects in new and existing development. Additionally, the CAP Update includes strategies to increase the use of active transportation and public transit and reduce VMT within Livermore, which would reduce transportation fuel use. As Livermore's population grows and development intensifies in the future, actions contained within the CAP Update would ensure that planned new development not related to the CAP Update is constructed to strict energy efficiency standards and that VMT is reduced. As the CAP Update would result in decreased non-renewable energy use within Livermore and would align with existing plans and policies related to renewable energy and energy efficiency, implementation of the CAP Update would result in ***no cumulative impact*** related to energy.

# 7 Geology and Soils

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? | ☐ | ☐ | ☐ | ■ |
| 2. Strong seismic ground shaking? | ☐ | ☐ | ☐ | ■ |
| 3. Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☐ | ■ |
| 4. Landslides? | ☐ | ☐ | ☐ | ■ |
| b. Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ■ | ☐ |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ■ | ☐ |
| d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | ☐ | ☐ | ■ | ☐ |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ■ |
| f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ■ | ☐ |

*a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

1. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*
2. *Strong seismic ground shaking?*
3. *Seismic-related ground failure, including liquefaction?*
4. *Landslides?*

The Livermore area is classified as seismic hazard Zone 4 (the highest risk category), and there are five major active faults within the vicinity of Livermore that could cause seismic-related impacts: the Calaveras, Greenville, Hayward, Mount Diablo, and San Andreas Faults. The Greenville Fault is the closest fault and runs through the northeastern portion of Livermore. There are also a number of smaller faults in the vicinity of Livermore, including the Las Positas Fault, which crosses the southeastern portion.[60, 61] According to the Livermore General Plan Public Safety Element, the only area at risk of fault rupture within Livermore is in the northeastern portion of along the Greenville Fault. In addition, earthquakes occurring on the nearby faults have the potential to generate severe to violent ground shaking within Livermore.[62] The majority of Livermore is at very low to medium susceptibility for liquefaction, with areas of high and very high liquefaction potential concentrated around the arroyos, such as Arroyo Las Positas and Arroyo Mocho. There is low potential for landslides throughout most of Livermore, except for in the hillside areas at the northern and southern fringes.[63, 64] In 2018, the Tri-Valley Cities (Livermore, Pleasanton, and Dublin), adopted a Local Hazard Mitigation Plan (LHMP) to assess hazards and reduce risks prior to a disaster event and fully cover the necessity to address seismic and geological hazards. According to the LHMP, Livermore is at high risk of earthquake impacts and low risk of other geologic hazards such as landslides.[65]

Although Livermore is at risk of earthquake-induced ground shaking and associated hazards, the CAP Update is a policy document containing climate strategies and supporting actions to reduce GHG emissions and is consistent with the Livermore General Plan, LHMP, and other regional and State seismic regulations. The CAP Update does not propose habitable development or policies that could result in exposure of people to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides. Therefore, the CAP Update would result in ***no impact*** related to seismic- and landslide-related hazards.

*b. Would the project result in substantial soil erosion or the loss of topsoil?*

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[60] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan. Available: <http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=35090>. Accessed May 5, 2022.

[61] California Geological Survey. 2022. Earthquake Zones of Required Investigation. Available: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>. Accessed May 5, 2022.

[62] Livermore, City of. 2003. Livermore General Plan Public Safety Element. Available: <https://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23899>. Accessed May 6, 2022.

[63] Ibid

[64] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan. Available: <http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=35090>. Accessed May 5, 2022.

[65] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan: Planning Partner Annexes. Available: <https://dublin.ca.gov/DocumentCenter/View/20468/2018-09-04_HMP-Volume-2-_Tri-Valley_FINAL>. Accessed May 5, 2022.

The CAP Update would promote sustainable infrastructure development and redevelopment. As a policy document, the CAP Update would not directly require ground-disturbing activities. However, implementation CAP Update Strategies E-1, B-1, B-2, T-1, T-3, M-1, and M-2 and Actions F-1.2, F-1.3, F-1.6, H-1.2, S-1.1, S-1.3, S-1.5, I-2.2, B-2.4, M-3.2, M-4.3, and T-2.1 may result in small-scale construction activities that could cause soil erosion or the loss of topsoil during construction.

CAP Update projects and actions would be reviewed for consistency with Livermore General Plan, LMC, and other local, regional, and State erosion and grading regulations prior to final siting and construction. The potential for CAP Update project construction activities involving soil disturbance to result in increased erosion and sediment transport by stormwater to surface waters would be minimized, because future projects would be required to comply with the Livermore Standard Specifications that include erosion and sediment control standards, LMC Chapter 13.45, Stormwater Management and Control Program, and/or the National Pollutant Discharge Elimination System (NPDES) Construction General Permit provided by the Regional Water Quality Control Board.[66, 67] These regulations require utilization of best management practices (BMPs) such as the covering of graded slopes and stockpiled materials, storm drain protection, and use of fiber rolls and silt fences to reduce erosion and topsoil loss from stormwater runoff. Compliance with the Livermore Standard Specifications, LMC Chapter 13.45, and/or Construction General Permit would ensure that BMPs are implemented during construction and minimize substantial soil erosion or the loss of topsoil. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to soil erosion and loss of topsoil.

c. *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*

d. *Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

According to the Livermore General Plan Public Safety Element and LHMP, the majority of Livermore is at very low to medium susceptibility for liquefaction, with areas of high and very high liquefaction potential concentrated around the arroyos, such as Arroyo Las Positas and Arroyo Mocho. Areas surrounding the arroyos also have the potential for lateral spreading. There is low potential for landslides throughout most of Livermore, except for in the hillside areas at the northern and southern fringes of Livermore.[68, 69] Expansive soils are known to be present throughout Livermore, particularly in the foothills.[70] The Livermore General Plan Public Safety Element, LMC, and California Building Code (CBC) contain policies that limit development on areas of unstable soils and

[66] Livermore, City of. 2015. Livermore Standard Specifications. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/721/637165720821730000>. Accessed May 6, 2022.

[67] Livermore, City of. 2022. Livermore Municipal Code Chapter 13.45. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=606&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=1&hits=63a+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed May 6, 2022.

[68] Livermore, City of. 2003. Livermore General Plan Public Safety Element. Available: <https://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23899>. Accessed May 6, 2022.

[69] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan. Available: <http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=35090>. Accessed May 5, 2022.

[70] Livermore, City of. 2003. Livermore General Plan Public Safety Element. Available: <https://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23899>. Accessed May 6, 2022.

regulations for structural design and soil hazards in order to mitigate potential impacts related to unstable soils.

The CAP Update is a policy document containing programs that are consistent with the Livermore General Plan. Some of the proposed policies in the CAP Update would support small-scale construction projects, such as EV charging stations and microgrid projects. However, CAP Update projects and actions would be reviewed for consistency with local and State geotechnical regulations prior to final siting and construction. New structures would be required to comply with LMC Chapter 15.02, Building Code, which adopts the latest CBC, including measures to address unstable soil conditions.[71] Therefore, the CAP Update would result in a ***less-than-significant impact*** related to risks associated with location on unstable geologic unit or soil or on expansive soils.

*e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

The CAP Update would not involve the development of habitable structures and, thus, no use of septic tanks or alternative wastewater disposal systems. Therefore, ***no impact*** would occur related to soil capability support of alternative wastewater disposal systems.

*f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

There are four deposits within and in the vicinity of Livermore likely to contain paleontological resources: the Livermore Formation in the foothills, the Sycamore Formation in the northern portion of Livermore, the San Pablo Group located throughout the Livermore area, and the Great Valley Complex and Franciscan Complex in the southeast of Livermore.[72] The Livermore General Plan Community Character Element includes goals and policies for the protection of paleontological resources, including Objective CC-3.4 and its associated policies to provide for the identification, evaluation and protection of paleontological resources.[73]

As a policy document, the CAP Update would not directly result in impacts related to paleontological resources or unique geologic features. CAP Update policies that would involve construction activities, such as the policies related to building energy-efficiency and renewable energy retrofits and EV charging infrastructure, would involve work within existing, previously graded and disturbed areas where the likelihood of encountering intact and previously undiscovered paleontological resources would be minimal. Nonetheless, there is a possibility that these small-scale construction projects may expose paleontological resources during ground disturbing activities. To reduce such risks, CAP Update projects and actions would be reviewed for consistency with geotechnical and paleontological regulations prior to final siting and construction. CAP Update projects would be required to implement BMPs in accordance with the Livermore General Plan Community Character Element Objective CC-3.4 Policies P2. and P3. that require a survey by a qualified professional in project areas known to contain paleontological resources as part of the environmental assessment process and the halting of construction and investigation of

[71] Livermore, City of. 2022. Livermore Municipal Code Chapter 15.02. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed May 6, 2022.

[72] Livermore, City of. 2003. Livermore General Plan Update Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <http://dev.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?blobid=23819>. Accessed April 14, 2022.

[73] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7289/637587704118730000>. Accessed April 28, 2022.

any paleontological resources unearthed during ground disturbing activities. In addition, the CAP Update projects would be located and designed strategically to reduce ground disturbance to the maximum extent possible. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to paleontological resources and unique geologic features.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. CAP Update projects, in combination with other cumulative projects anticipated under General Plan buildout, could expose additional people and property to the low to moderate seismic and geologic hazards that are present in the region. The magnitude of geologic hazards for individual projects, including those associated with implementation of the CAP Update, would depend upon the location, type, and size of development and the specific hazards associated with individual sites. Specific geologic hazards associated with individual project sites would be limited to those sites without affecting other areas. Similarly, potential impacts to paleontological resources associated with each individual site would be limited to that site without affecting other areas, and impacts related to these resources would be minimized on a case-by-case basis. Compliance with existing regulations, including CBC requirements, City-issued permit requirements, the Livermore General Plan, the Livermore Standard Specifications, and/or Construction General Permit requirements, would minimize potential cumulative seismic and geologic impacts. Seismic and geologic hazards would be addressed on a case-by-case basis and would not result in cumulative impacts. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to geology and soils.

# 8 Greenhouse Gas Emissions

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ■ | ☐ |
| b. Conflict with any applicable plan, policy, or regulation adopted to reduce the emissions of greenhouse gases? | ☐ | ☐ | ☐ | ■ |

*a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

The greenhouse effect is a natural occurrence that helps regulate the temperature of the Earth. The majority of radiation from the sun hits Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions. This process is essential to support life on Earth because it warms the planet by approximately 60°F. Emissions from human activities since the beginning of the industrial revolution (approximately 270 years ago) have been adding to the natural greenhouse effect by resulting in increased gases in the atmosphere that trap heat and contribute to an average increase in Earth's temperature. Global warming is the observed increase in the average temperature of the Earth's surface, and climate change is the resultant change in wind patterns, precipitation, and storms over an extended period.

GHGs produced by human activities include $CO_2$, methane ($CH_4$), nitrous oxide ($N_2O$), hydroflourocarcons, perfluorinated compound, and sulfur hexafluoride (see Appendix B for more details related to these GHG gases).[74] Combustion of fossil fuels (gasoline, natural gas, and coal), deforestation, and decomposition of waste release carbon into the atmosphere that had been locked underground and stored in oil, gas, and other hydrocarbon deposits or in the biomass of surface vegetation. Since 1750, estimated concentrations of $CO_2$, $CH_4$, and $N_2O$ in the atmosphere have increased by over 36 percent, 148 percent, and 18 percent respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition.

Changes to the land surface also indirectly affect the atmosphere by changing the way in which Earth absorbs gases from the atmosphere. Potential impacts in California due to climate change include sea level rise, more extreme-heat days and high-ozone days, larger and more frequent

[74] The CAP Update only considers emissions of $CO_2$, $CH_4$, and $N_2O$, because these are the GHGs most relevant to local government policymaking. These gases comprise a large majority of GHG emissions at the community level. The remaining gases are emitted primarily in private sector manufacturing and electricity transmission and are the subject of regulation at the State level. Therefore, these gases were omitted from the CAP Update.

forest fires, and more frequent and severe drought years.[75] Although GHG emissions do not typically cause direct health impacts at a local level, GHG emissions can result in indirect health impacts by contributing to climate change, which can have public health implications. The primary public health impacts of climate change include the following:

- Increased incidences of hospitalization and deaths due to increased incidences of extreme heat events;
- Increased incidences of health impacts related to ground-level ozone pollution due to increased average temperatures that facilitate ozone formation;
- Increased incidences of respiratory illnesses from wildfire smoke due to increased incidences of wildfires;
- Increased vector-borne diseases due to the growing extent of warm climates; and
- Increased stress and mental trauma due to extreme events and disasters, economic disruptions, and residential displacement.[76]

Livermore has completed a communitywide GHG emissions inventory for 2017, which is summarized in Table 1. The transportation sector was the largest contributor to Livermore's GHG emissions, followed by the energy sector. Figure 3 and Table 4 summarize the communitywide GHG emissions forecast under three scenarios: 1) business-as-usual projections, 2) business-as-usual projections with adjustment for implementation of State measures, and 3) the City of Livermore target reduction path along with implementation of State measures. As shown therein, under the business-as-usual scenario, communitywide GHG emissions are forecasted to increase to approximately 581,014 MT of $CO_2e$ (5.48 MT of $CO_2e$ per capita) by the year 2030, based on anticipated economic and population growth. However, with implementation of State laws and programs, communitywide GHG emissions would decline to approximately 455,776 MT of $CO_2e$ (4.30 MT of $CO_2e$ per capita) by 2030. Furthermore, implementation of the local actions included in the CAP Update alongside State laws and programs would reduce communitywide GHG emissions to approximately 326,847 MT of $CO_2e$ (3.08 MT of $CO_2e$ per capita) by 2030.

The strategies included in the CAP Update combined with Statewide legislation and initiatives and Countywide transportation programs will enable the City of Livermore to meet its per capita emissions reduction target of 68 percent below 1990 levels (a 40 percent reduction in communitywide emissions) by 2030, meeting the California SB 32 target for 2030 to reduce total GHG emissions 40 percent below 1990 levels. The City needs to achieve a GHG emissions reduction from 2030 BAU levels of 128,238 MT of $CO_2e$ to meet the SB 32 target. The total estimated GHG reductions from 2030 business-as-usual levels that would be achieved by implementation of local actions under the CAP Update along with Statewide legislation and initiatives total 254,167 MT of $CO_2e$ by 2030 and would meet the SB 32 requirements. Because SB 32 is considered an interim target toward meeting the longer-term State goal of carbon neutrality by 2045, implementation of the CAP Update would also be considered demonstration of substantial progress toward meeting the California 2045 goal. Avoiding interference with and rather making substantial progress toward this longer-term State target is important, because this target has been set at a level that achieves

[75] CARB and California Environmental Protection Agency (CalEPA). 2009. Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature. Available: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.386.4605&rep=rep1&type=pdf>. Accessed May 6, 2022.

[76] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. Available: <http://www.climateassessment.ca.gov/state/>. Accessed May 16, 2022.

California's fair share of international emissions reduction targets that will stabilize global climate change effects and help lessen the associated adverse environmental consequences.

The CAP Update includes a list of 24 strategies, each containing identified actions, intended to reduce communitywide GHG emissions and/or vulnerability to the effects of climate change. Implementation of the CAP Update would result in the reduction of communitywide operational GHG emissions, while only generating temporary GHG emissions during construction of infrastructure such as EV charging stations, microgrid projects, and building energy efficiency upgrades. Additionally, the CAP Update would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include reduction in building energy consumption, vehicle miles traveled (and thus air pollution), and solid waste generation. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to generation of GHG emissions.

*b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The CARB 2017 Climate Change Scoping Plan outlines a pathway to achieving the 2030 reduction targets set under SB 32 and are considered interim targets toward meeting the longer-term 2045 carbon neutrality goal established by EO B-55-18. The CAP Update is a policy-level document that sets strategies to reduce Livermore GHG emissions in an effort to also comply with State regulations. As discussed under *Response 8a*. above, the CAP Update includes strategies to reduce Livermore GHG emissions from forecasted business-as-usual levels to approximately 326,847 MT of $CO_2$e (3.08 MT of $CO_2$e per capita) by 2030. The purpose of the CAP Update is to meet Livermore's proportionate fair share of the Statewide GHG emissions reduction target set by SB 32 and work toward the California longer-term target of carbon neutrality by 2045 identified in EO B-55-18.

The CAP Update would not conflict with any applicable GHG reduction plans, including the CARB 2017 Climate Change Scoping Plan. The CAP Update identifies how Livermore would achieve consistency with the Statewide GHG emissions limit. The CAP Update would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include reduction in building energy consumption, vehicle miles traveled (and thus air pollution), and solid waste generation. Therefore, the CAP Update would result in a ***no impact*** related to consistency with applicable GHG emissions reduction plans, policies, and regulations.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Analyses of GHG emissions and climate change are cumulative in nature, as they affect the accumulation of GHG emissions in the atmosphere. Cumulative projects anticipated under Livermore General Plan buildout that exceed the thresholds discussed above would have a significant impact related to GHG emissions and climate change, both individually and cumulatively. The CAP Update creates a GHG emissions reduction strategy (consistent with Section 15183.5 of the CEQA Guidelines) for Livermore. The CAP Update also includes a series of actions that are intended to reduce per capita GHG emissions by approximately 68 percent below 1990 levels (a 40 percent reduction in communitywide emissions) by 2030, which provides substantial progress toward Livermore meeting State goals. As such, the CAP Update would result in the reduction of GHG emissions rather than generating GHG emissions. Some GHG emissions would occur during construction of CAP Update-specific infrastructure projects; however, these emissions would be temporary and minor in nature. Therefore,

implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to GHG emissions.

# 9 Hazards and Hazardous Materials

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ■ | ☐ |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ■ | ☐ |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? | ☐ | ☐ | ■ | ☐ |
| d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ■ | ☐ |
| e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | ☐ | ☐ | ☐ | ■ |
| f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ■ |
| g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? | ☐ | ☐ | ☐ | ■ |

*a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

*b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

The CAP Update is a policy document containing strategies and actions to reduce GHG emissions. The CAP Update does not involve identified site-specific development and, for the most part, it would not facilitate new development that would involve the routine use of hazardous materials. Implementation of some of the CAP Update actions, such as energy and water efficiency retrofits and installation of EV charging stations, would require construction activities. Construction would involve the temporary use of hazardous materials such as vehicle fuels and fluids that could be released should an accidental leak or spill occur. However, these types of materials are not considered acutely hazardous, and storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control, U.S. EPA, and Occupational Safety & Health Administration. In addition, standard construction BMPs for the use and handling of such materials would avoid or reduce the potential for such conditions to occur. Any use of potentially hazardous materials during construction of projects would comply with all local, State, and federal regulations regarding the handling of potentially hazardous materials, including Title 49 of the Code of Federal Regulations and Title 22, Division 4.5 of the CCR. Risk of spills would cease after construction is completed. Therefore, construction activities related to CAP Update actions would not be anticipated to create upset and accident conditions involving the release of hazardous materials, and operation of the majority of CAP Update actions would not involve the routine transport, use, or disposal of hazardous materials during operation.

Operation of the majority of CAP Update-related projects would not involve the routine transport, use, or disposal of hazardous materials. However, CAP Update Strategies E-1, B-2, and M-1 would increase renewable energy generation and storage within Livermore to provide clean energy sources by establishing micro-grid projects, small-scale renewable energy infrastructure such as rooftop solar panels on new and existing buildings, and battery energy storage. Hazardous materials used in battery energy storage systems would generally consist of the lithium-ion batteries. Lithium-ion technology is a common battery storage medium and is considered one of the most efficient methods of energy storage on the market. During normal operation, lithium-ion batteries do not represent a risk to off-site receptors, and safety standards applicable to energy storage facilities and safety certification tests established by independent bodies, such as Underwriters Laboratories, National Fire Protection Association, and International Electrotechnical Commission would prevent any reasonable possibility of a substantial adverse effect on the environment related to the lithium-ion batteries. However, in the unlikely event of a fire, there is a risk of the accidental release of hazardous materials associated with battery energy storage systems. Any future proposed battery energy storage facilities would, therefore, be carefully reviewed for appropriate locations, safety measures, and consistency with the Livermore General Plan and LMC, as well as the applicable local, State, and federal regulations. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to creating a significant hazard through the routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

*c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

The CAP Update is a policy document containing strategies to reduce GHG emissions and build communitywide resilience. The CAP Update does not include site-specific proposals and development, nor would it emit or handle hazardous materials. Implementing some CAP Update actions may require future development or improvements, such as EV charging stations, new active transportation and public transit facilities, and microgrid projects. However, CAP Update projects and actions would be reviewed to ensure the appropriate location of projects in relation to existing development in Livermore and would be reviewed for consistency with the Livermore General Plan, LMC, and applicable local, State, and federal regulations when specific projects and locations are identified. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to handling of hazardous materials in proximity to schools.

*d. Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

The CAP Update is a policy document containing strategies and supporting actions to reduce GHG emissions and build communitywide resilience. The proposed CAP Update does not include site-specific proposals and development, implementation of the CAP Update could result in future projects that could be located on listed hazardous materials sites. However, CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan and LMC and would be required to comply with applicable local, State, and federal regulations related to hazardous materials sites. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to location on a listed hazardous materials site.

*e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

The Livermore Municipal Airport is located in the northwesternmost portion of Livermore, adjacent to Las Positas Golf Course. The safety goals and policies associated with the Livermore Municipal Airport area are included in the Livermore Municipal Airport Land Use Compatibility Plan.[77] The CAP Update is a policy document that would not increase airport activity or result in additional habitable development or commercial development that could increase potential exposure of residents and employees to aircraft-related hazards. Additionally, CAP Update-related projects would be reviewed for consistency with the Livermore Municipal Airport Land Use Compatibility Plan and other applicable local and State regulations related to airport noise and safety. Therefore, the CAP Update would result in ***no impact*** related to risks associated with location proximate to a public airport.

*f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The CAP Update is a policy document intended to reduce GHG emissions and build communitywide resilience. The CAP Update does not involve site-specific development, nor would it facilitate new development that would interfere with adopted emergency plans. Implementation of some CAP Update strategies and actions, such as the addition of new pedestrian, bicycle, and public transit

[77] Alameda County Airport Land Use Commission. 2012. Livermore Municipal Airport Land Use Compatibility Plan. Available: <https://www.acgov.org/cda/planning/generalplans/documents/LVK_ALUCP_082012_FULL.pdf>. Accessed May 6, 2022.

facilities, would require construction on local roadways. Such projects would generally occur on local roads and not affect major highways typically used for emergency evacuation. Nonetheless, construction activities have the potential to require lane closures and may impact traffic and vehicle speeds on the affected roadways; however, these impacts would be temporary, and access to roadways would generally be maintained throughout project construction. Furthermore, future projects involving work in the public right-of-way would be required to coordinate with the City to ensure appropriate construction staging and adequate vehicular and pedestrian access on adjacent roadways, pursuant to LMC Chapter 12.08, Encroachments.[78] In addition, CAP Update Action E-1.2 would expand microgrid deployment to provide resilience at critical facilities such as police and fire departments, which would improve the City's ability to respond in emergency events. Therefore, the CAP Update would result in ***no impact*** related to impairment or interference with implementation of an emergency response or evacuation plan.

*g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

According to LHMP and Livermore General Plan Public Safety Element, the majority of Livermore, which is urbanized, is at low risk of wildfire. Areas susceptible to wildfire are limited to those portions of Livermore at the urban-wildland fringe. These areas are concentrated along the northern, eastern, and southwestern boundaries of Livermore, where areas of moderate- and high-fire hazard severity are mapped by the California Department of Forestry and Fire Protection (CAL FIRE).[79,80,81] Although portions of Livermore are subject to wildland fire risk, the CAP Update does not propose specific development or new residential or commercial land uses that could be subject to wildland fire. In addition, the CAP Update includes Strategy WF-1 that aims to reduce the risk of wildfire in the community and improve wildfire preparedness. Therefore, the CAP Update would result in ***no impact*** related to risks associated with exposure to wildland fires.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Hazards and hazardous materials impacts are typically site-specific in nature. CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, are not anticipated to contribute to cumulative hazards and hazardous materials impacts with adherence to applicable Livermore General Plan policies and applicable local, State, and federal regulatory requirements. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to hazards and hazardous materials.

[78] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.08. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed May 6, 2022.

[79] Livermore, City of. 2003. Livermore General Plan Public Safety Element. Available: <https://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23899>. Accessed May 6, 2022.

[80] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan. Available: <http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=35090>. Accessed May 5, 2022.

[81] California Department of Forestry and Fire Protection (CAL FIRE). 2022. FHSZ Viewer. Available: <https://egis.fire.ca.gov/FHSZ/>. Accessed May 6, 2022.

# 10 Hydrology and Water Quality

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? | ☐ | ☐ | ■ | ☐ |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | ☐ | ☐ | ☐ | ■ |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | ☐ | ☐ | ☐ | ■ |
| (i) Result in substantial erosion or siltation on- or off-site; | ☐ | ☐ | ☐ | ■ |
| (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; | ☐ | ☐ | ☐ | ■ |
| (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | ☐ | ☐ | ☐ | ■ |
| (iv) Impede or redirect flood flows? | ☐ | ☐ | ☐ | ■ |
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | ☐ | ☐ | ■ | ☐ |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☐ | ☐ | ☐ | ■ |

*a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

The CAP Update is a policy document containing actions intended to reduce GHG emissions and build communitywide resilience in Livermore. CAP Update Strategies E-1, B-2, and M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems at both municipal facilities and in private development to provide greener renewable electricity. CAP Update Actions F-1.2, F-1.3, and M-4.3 would result in new green stormwater infrastructure projects in Livermore including wetland restoration, bioswales, passive rain capture systems, and replacement of impermeable pavement with permeable surfaces. CAP Update Actions F-1.6, H-1.2, S-1.1, and S-1.3 would seek to plant additional trees throughout Livermore. CAP Update Strategies B-1 and M-2 and Action I-2.2 promote electrification and energy efficiency upgrades to existing buildings. CAP Update Strategy T-1 and Actions B-2.4 and M-3.2 would result in the construction of new EV and alternative-fuel vehicle infrastructure throughout Livermore. CAP Update Action T-2.1 may include an installation of a new electric trolley service and Strategy T-3 would add new bicycle and pedestrian infrastructure throughout Livermore. CAP Action S-1.5 may include construction of a carbon capture and storage facility or climate restoration pilot project. These actions may result in small scale construction activities in the future that could result in temporary water quality impacts due to soil erosion and ground disturbance, as further discussed under *Response 10c* in Section 7, *Geology and Soils*.

However, CAP Update projects and actions would be reviewed for consistency with local and State regulations, including the NPDES permitting program that requires implementation of Stormwater Pollution Prevention Plans (SWPPPs), Livermore Standard Specifications, and LMC Chapter 13.45, Stormwater Management and Control Program.[82, 83] These regulations require BMPs to reduce water quality impacts from construction activities. Compliance with the Livermore Standard Specifications, LMC, and NPDES permitting program would ensure that BMPs are implemented during construction to minimize potential impacts to surface and groundwater quality. As such, the CAP Update's related infrastructure and retrofit projects would not result in new or different wastewater discharge that would violate water quality standards, waste discharge requirements, or otherwise degrade surface or groundwater quality. Therefore, the CAP Update would result in ***less-than-significant impacts*** related to surface or groundwater water quality in Livermore.

*b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

The CAP Update is a policy document containing strategies intended to reduce GHG emissions and increase sustainability. CAP Update Strategy D-1 seeks to decrease community water use through water efficiency retrofits, water reuse, and sustainable landscaping. Reduced water use within Livermore would aid in maintaining groundwater supplies. In addition, CAP Update Strategy F-1 is intended to improve sustainable stormwater management by developing green stormwater infrastructure and completing wetland restoration projects. Increased green stormwater infrastructure would improve groundwater infiltration and recharge within Livermore. Furthermore,

[82] Livermore, City of. 2015. Livermore Standard Specifications. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/721/637165720821730000>. Accessed May 6, 2022.

[83] Livermore, City of. 2022. Livermore Municipal Code Chapter 13.45. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=606&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=1&hits=63a+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed May 6, 2022.

implementation of other CAP Update strategies, such as improved EV charging infrastructure and building energy efficiency retrofits, would not substantially degrade groundwater quality or recharge or result in increased groundwater demand. Therefore, the CAP Update would result in ***no impact*** related to impedance of sustainable groundwater management.

*c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

- *Result in substantial erosion or siltation on- or off-site?*
- *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*
- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*
- *Impede or redirect flood flows?*

Implementation of several CAP Update strategies and actions may promote infrastructure development and small-scale construction activities within Livermore. Implementation CAP Update Strategies E-1, B-1, B-2, T-1, T-3, M-1, and M-2 and Actions F-1.2, F-1.3, F-1.6, H-1.2, S-1.1, S-1.3, S-1.5, I-2.2, B-2.4, M-3.2, M-4.3, and T-2.1 may result in small-scale construction activities throughout Livermore. Implementation of these CAP Update actions would primarily occur within previously developed areas and would not result in substantial alterations to Livermore's existing drainage pattern and amount of impervious surface. Construction of CAP Update projects could result in erosion as discussed in Section 7, *Geology and Soils*. However, impacts to drainage and water quality during construction would be minimized through the implementation of BMPs as required by the Livermore Standard Specifications, LMC Chapter 13.45, Stormwater Management and Control Program, and the NPDES Construction General Permit program.[84, 85] In addition, CAP Update projects would be in accordance with the Livermore General Plan, which includes goals and policies for the protection and preservation of creeks, streams, and groundwater within Livermore.[86] Furthermore, CAP Update Strategy F-1 and Actions M-4.3 and S-1.3 would seek to add new green stormwater infrastructure, restore Livermore's wetlands and arroyos, and decrease the amount of impermeable surface within Livermore, all which would improve drainage and water quality. Therefore, the CAP Update would result in a ***no impact*** related to the alteration of existing drainage patterns.

*d. Would the project result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Livermore is not located within designated seiche or tsunami zones. Portions of Livermore are within the 100- and 500-year flood zones defined by Federal Emergency Management Agency, and Livermore could also become flooded in the event of a catastrophic failure at the Del Valle Dam or Patterson Dam located approximately 2.2 miles south and 3,600 feet east of Livermore,

[84] Livermore, City of. 2015. Livermore Standard Specifications. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/721/637165720821730000>. Accessed May 6, 2022.

[85] Livermore, City of. 2022. Livermore Municipal Code Chapter 13.45. Available: <https://www.codepublishing.com/search/?cmd=getdoc&DocId=606&Index=%2fvar%2flib%2fdtsearch%2fhtml%2fCA%2fLivermore&HitCount=1&hits=63a+&SearchForm=D%3A%5Cinetpub%5Cwwwroot%5Cpublic_html%5CCA%5CLivermore%5CLivermore_form.html>. Accessed May 6, 2022.

[86] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed April 19, 2022.

respectively.[87] Therefore, areas of Livermore are at risk of flooding. As described under *Response 10c.*, CAP Update projects would not impede or redirect flood flows, and as discussed under *Response 9a. and 9b.* in Section 9, *Hazards and Hazardous Materials*, CAP Update projects would generally not involve the regular use or storage of hazardous materials with the exception of battery energy storage facilities that include the storage of lithium-ion batteries. Future CAP Update projects, such as battery energy storage facilities, would be reviewed for compliance with the applicable local and State regulations related to flooding and hazardous materials use and storage, including LMC Chapter 16.04, Hazardous Materials Release and Response Plans, LMC Chapter 16.12, Flood Control Regulations, and CBC standards for construction within flood-prone areas.[88, 89] Therefore, the CAP Update would result in a ***less-than-significant impact*** related to flooding and inundation resulting in release of pollutants.

*e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The CAP Update strategies and actions would not include activities that would result in the direct extraction of groundwater. Rather, the CAP Update encourages reduced water consumption and expanded green stormwater infrastructure within Livermore, which would aid in groundwater recharge and reduced surface water runoff and related water quality issues. The CAP Update would not interfere with or obstruct implementation of water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Therefore, the CAP Update would result in ***no impact*** related to consistency with a water quality control plan or sustainable groundwater management plan.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, are not anticipated to contribute to cumulative hydrology and water quality impacts with adherence to applicable Livermore General Plan policies and local, State, and federal regulatory requirements. Implementation of the CAP Update would not contribute to an increase in growth and development in Livermore but could result in small-scale infrastructure development and building retrofit projects, including new EV charging infrastructure, microgrid projects, and energy and water efficiency upgrades. As such, implementation of the CAP Update and other cumulative projects could have incremental impacts related to hydrology and water quality, such as erosion and sedimentation due to construction activities. However, the CAP Update's contribution to such impacts would be minor and temporary, and the CAP Update would have the long-term effect of reducing water use and improving sustainable stormwater management. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to hydrology and water quality.

[87] Livermore, City of. 2003. Livermore General Plan Update Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <http://dev.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?blobid=23819>. Accessed May 10, 2022.

[88] Livermore, City of. 2022. Livermore Municipal Code Chapter 16.04. Available: <https://www.codepublishing.com/CA/Livermore/Municipal/Livermore16/Livermore1604.html#16.04/>. Accessed May 10, 2022.

[89] Livermore, City of. 2022. Livermore Municipal Code Chapter 16.12. Available: <https://www.codepublishing.com/CA/Livermore/Municipal/Livermore16/Livermore1612.html#16.12>. Accessed May 10, 2022.

# 11 Land Use and Planning

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Physically divide an established community? | ☐ | ☐ | ☐ | ■ |
| b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ■ |

*a. Would the project physically divide an established community?*

The CAP Update is a policy document containing strategies that are consistent with the Livermore General Plan and does not include actions or specific development projects that would divide an established community. CAP Update Strategies T-2 and T-3 facilitate the provisioning of new bicycle and pedestrian infrastructure and amenities and improved public transit connectivity. Such actions would help to increase connectivity within the Livermore community. Therefore, the CAP Update would result in ***no impact*** related to division of an established community.

*b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The CAP Update is a policy document containing strategies that are consistent with the Livermore General Plan and that are designed to reduce adverse environmental impacts associated with climate change. Nonetheless, implementing the CAP Update would require some modification of existing policies, including developing and implementing new programs, and projects, or modifying existing ones. For example, CAP Update Actions D-1.2, F-1.5, B-1.1, T-1.4, T-4.1, T-4.2, and S-1.3 may include adoptions of new ordinances, General Plan updates, or updates to the existing municipal and development codes to require water reuse, permeable hardscaping, building electrification, EV charging infrastructure, and updated landscaping requirements and to encourage a jobs-housing balance and infill development in Livermore. In order to implement these measures, the LMC, Livermore General Plan, and other applicable City documents may need to be amended to reflect new or modified requirements. However, where modifications of existing policies are needed, such as updates to policies related to energy, EV infrastructure, and active transportation, the CAP Update strategies and actions would result in greater avoidance or reduction of environmental effects. In addition, future plans or projects (including potential changes to the General Plan or zoning) requiring discretionary approval would be subject to environmental review under CEQA, and individual impact analyses would identify required plan- or project-specific mitigation measures where applicable. Therefore, the CAP Update would result in ***no impact*** related to consistency with current land use plans or policies.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. The CAP Update is a policy document containing strategies that are consistent with the Livermore General Plan. Nonetheless, implementing the CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would require some modification of existing land use policies, including developing and implementing new programs and projects, or modifying existing ones. The proposed policy changes are consistent with the intent of the goals and policies established within the Livermore General Plan and Zoning Regulations and would not cumulatively contribute to the division of the Livermore community or conflicts with land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect. Future plans or projects (including potential changes to the General Plan or zoning) requiring discretionary approval would be subject to environmental review under CEQA, including an analysis of potential cumulative growth impacts. Cumulative projects, including the CAP Update, would be required to adhere to City development regulations and Livermore General Plan policies to retain land use character and minimize environmental impacts. Future CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan and other applicable regulatory land use actions prior to approval. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to land use.

# 12 Mineral Resources

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ■ |
| b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | ☐ | ☐ | ☐ | ■ |

*a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

*b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

Livermore is underlain by alluvial deposits that contain sand and gravel resources. The Livermore General Plan and General Plan EIR identify the quarries to the southwest of Livermore boundary, between Livermore and Pleasanton, as an aggregate resource area of Statewide significance. These areas are within unincorporated Alameda County and are exclusively for mineral resources extraction and other compatible uses. The CAP Update would not conflict with or alter these land uses. Most of Livermore south of I-580 is classified as either Mineral Resource Zone (MRZ)-2, areas where significant mineral deposits are present, or MRZ-3, areas where mineral deposits are present but the significance of the deposits is unknown.[90, 91] Although mineral deposits are present throughout Livermore, Livermore is largely urbanized, which limits the potential for mineral resources extraction. The Livermore General Plan Conservation and Open Space Element includes Goal OSC-4 to preserve and utilize mineral resources in Livermore. The CAP Update would not conflict with this policy or otherwise impact operations in the active quarry area.[92] Furthermore, the CAP Update would not facilitate additional urban growth or infrastructure development projects within Livermore that could result in the loss of availability of known mineral resources. Therefore, the CAP Update would result in ***no impact*** related to mineral resource.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Although Livermore is underlain by mineral resources, the potential for mineral resources extraction is limited due to the urbanized nature of

[90] Livermore, City of. 2003. Livermore General Plan Update Environmental Impact Report. Volume I: Master Environmental Assessment. Available: <http://dev.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?blobid=23819>. Accessed May 10, 2022.

[91] Livermore, City of. 2003. Livermore General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed May 10, 2022.

[92] Ibid

Livermore. Mineral resource recovery sites in the vicinity of Livermore include the quarries to the southwest of Livermore boundary. These areas are within unincorporated Alameda County and are exclusively for mineral resources extraction and other compatible uses. The CAP Update would not conflict with or alter these land uses. CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, are not anticipated to contribute to cumulative impacts to mineral resources with adherence to the Livermore General Plan policies related to conservation of such resources. Therefore, implementation of the CAP Update would result in ***no cumulative impact*** related to mineral resources.

# 13 Noise

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project result in: | | | | |
| a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ■ | ☐ |
| b. Generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ■ | ☐ |
| c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ■ |

*a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as construction equipment). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance, while noise from a point source typically attenuates at about 6 dBA per doubling of distance. Noise levels may also be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor

and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by 5 to 10 dBA.

The Livermore General Plan Noise Element identifies roadway traffic, trains, aircraft, industrial plant equipment, and activities associated with neighborhoods and schools as major noise sources in Livermore. The Livermore Noise Element aims to ensure appropriate noise levels considered compatible for community noise environments.[93] The City's normally acceptable exterior noise exposure standards for various land uses are shown in Table 5. Consistent with State noise insulation standards (CCR Title 24 Part 11), the Livermore General Plan Noise Element states that the maximum acceptable interior noise level for residential uses is 45 dBA.

**Table 5 Livermore General Plan Noise Element Normally Acceptable Noise Levels**

| Land Use | Exterior Noise Exposure ($L_{dn}$, dBA) |
|---|---|
| Residential Low-Density, Single Family, Duplex, Mobile Homes | 60 |
| Multi-family Residential | 65 |
| Transient Lodging, Hotels, and Motels | 65 |
| School, Library, Church, Hospital, Nursing Home | 70 |
| Auditorium, Concert Hall, Amphitheater | n/a |
| Sports Arena, Outdoor Spectator Sports | n/a |
| Playground, Neighborhood Park | 70 |
| Gold Course, Water Recreation, Cemetery | 75 |
| Office Building, Business Commercial, Professional, and Retail | 70 |
| Industrial, Manufacturing, Utilities, Agricultural | 75 |

dBA = A-weighted decibels; $L_{dn}$ = day/night average sound level; n/a = not applicable

Source: Livermore General Plan Noise Element

In addition, LMC Chapter 9.36, Noise, establishes noise regulations for loud noises, noises adjacent to schools, courts, churches and hospitals, and construction noise.[94] Construction noise is regulated by LMC Section 9.36.080, which prohibits construction between the hours of 8:00 pm and 7:00 am Monday through Friday, 6:00 pm and 9:00 am on Saturday, and on Sundays and holidays. [95]

The CAP Update is a policy document containing programs that are consistent with the Livermore General Plan. Some of the CAP Update actions would support small scale construction projects that could result in temporary noise. CAP Update Strategies E-1, B-2, and M-1 promote installation of small-scale solar PV systems, microgrid projects, and battery energy storage systems at both municipal facilities and in private development to provide greener renewable electricity. CAP Update Actions F-1.2, F-1.3, and M-4.3 would result in new green stormwater infrastructure projects in Livermore including wetland restoration, bioswales, passive rain capture systems, and replacement of impermeable pavement with permeable surfaces. CAP Update Actions F-1.6, H-1.2, S-1.1, and S-1.3 would seek to plant additional trees throughout Livermore. CAP Update Strategies

[93] Livermore, City of. 2003. General Plan Noise Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1387/637643623484130000>. Accessed May 12, 2022.

[94] Livermore, City of. 2022. Municipal Code Chapter 9.36. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed May 12, 2022.

[95] Ibid

B-1 and M-2 and Action I-2.2 promote electrification and energy efficiency upgrades to existing buildings. CAP Update Strategy T-1 and Actions B-2.4 and M-3.2 would result in the construction of new EV and alternative-fuel vehicle infrastructure throughout Livermore. CAP Update Action T-2.1 may include installation of a new electric trolley service and Strategy T-3 would add new bicycle and pedestrian infrastructure throughout Livermore. CAP Action S-1.5 may include construction of a carbon capture and storage facility or climate restoration pilot project. These strategies and measures would include short term construction activities; however, CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan and LMC, and construction activities would be required to comply with the provisions of the LMC Chapter 9.36, including the permitted construction hours and noise limits. Therefore, the CAP Update would not result in significant construction noise related impacts.

The CAP Update does not include future projects that would result in substantial operational noise. Rather, the CAP Update encompasses a suite of GHG-reduction opportunities that affect the transportation sector and its associated noise. For example, CAP Update Strategies T-1 through T-4 encourage adoption of EVs, which are quieter than gas-powered alternatives, facilitate improvements to bicycle, pedestrian, and public transit circulation to increase active transportation and transit ridership, and create sustainable land use patterns to decrease VMT. These strategies would reduce VMT and traffic-related noise in Livermore. Therefore, the CAP Update would not generate excessive operational noise levels and would result in a ***less-than-significant impact*** related to noise exposure.

*b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise.[96] Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or Root Mean Square (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings.[97] Vibration significance ranges from approximately 50 vibration decibels (VdB), which is the typical background vibration-velocity level, to 100 VdB, the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table 6.[98]

[96] California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual (CT-HWANP-RT-13-069.25.3). Available: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf>. Accessed May 12, 2022.

[97] Federal Highway Administration (FHWA). 2006. FHWA Highway Construction Noise Handbook. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). Available: <https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook00.cfm>. Accessed May 12, 2022.

[98] Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>. Accessed May 12, 2022.

**Table 6 Human Response to Different Levels of Groundborne Vibration**

| Vibration Velocity Level | Human Reaction |
|---|---|
| 65 VdB | Approximate threshold of perception for many people |
| 75 VdB | Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable. |
| 85 VdB | Vibration acceptable only if there are an infrequent number of events per day |

VdB = vibration decibels
Source: Federal Transit Administration 2018

The CAP Update is a policy document containing actions consistent with the Livermore General Plan. Some CAP Update actions would support small-scale construction projects, such as EV charging station construction and building energy and water efficiency retrofits that may result in a temporary, minor increase in groundborne vibration. However, CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan and LMC, and construction activities would be required to comply with applicable local, State, and federal regulations to ensure temporary construction impacts related to groundborne vibration would not occur. Furthermore, CAP Update projects would not include operational sources of groundborne vibration. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to groundborne vibration.

*c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The Livermore Municipal Airport is located in the northwestern portion of Livermore. The safety goals and policies associated with the Livermore Municipal Airport area are included in the Livermore Municipal Airport Land Use Compatibility Plan.[99] The CAP Update is a policy document that would not increase airport activity or result in additional habitable or commercial development that could increase potential exposure of residents and employees to aircraft-related noise. Therefore, the CAP Update would result in ***no impact*** related to aviation-related noise exposure.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. The CAP Update is a policy document containing programs that are consistent with the Livermore General Plan, including the Noise Element. Nonetheless, future CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would support construction projects, such as EV charging station construction, that may result in a temporary increase in groundborne vibration or noise levels. However, cumulative projects, including CAP Update projects, would be subject to review by the City for compliance with the Livermore General Plan and LMC and would be required to comply with applicable regulations governing noise and vibration. The CAP Update also includes GHG-reduction opportunities that would decrease VMT and related noise. As such, implementation of the CAP Update would not generate permanent, excessive groundborne vibration or noise levels. Therefore, the CAP Update would result in a ***less-than-significant cumulative impact*** related to noise.

[99] Alameda County Airport Land Use Commission. 2012. Livermore Municipal Airport Land Use Compatibility Plan. Available: <https://www.acgov.org/cda/planning/generalplans/documents/LVK_ALUCP_082012_FULL.pdf>. Accessed May 6, 2022.

# 14 Population and Housing

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ■ |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ■ |

*a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

*b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The CAP Update is a policy document containing programs that are consistent with Livermore General Plan. Implementation of the CAP Update strategies and policies would not facilitate specific development projects, such as new housing or employment opportunities, that could directly result in population growth. Nor does the CAP Updates include strategies and actions that would displace existing residents or housing. CAP Actions T-4.1 and T-4.2 encourage future modifications to the GP and Development Code to promote a jobs-housing balance and infill development. However, the CAP Update would not alter land use designations or zoning. Future plans or projects (including potential changes to land use designations or zoning) requiring discretionary approval would be subject to environmental review under CEQA, and individual impact analyses would identify required plan- or project-specific mitigation measures where applicable.

The CAP Update strategies and actions would serve to reduce VMT and urban sprawl, rather than result in substantial new housing or development that could result in unplanned population growth. In addition, new active transportation and public transit facility infrastructure that could result from implementation of the CAP Update would be for purposes of replacing existing single-occupancy vehicle use rather than extending infrastructure to support a growth in population. Therefore, the CAP Update would not directly increase the population, indirectly induce additional unplanned population growth, or displace people or housing. Therefore, the CAP Update would result in ***no impact*** related to population and housing.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, are not anticipated to displace people or housing nor induce substantial unplanned population growth within Livermore. Specifically, the CAP Update would not contribute to person or housing displacement in Livermore nor result in population growth beyond that already assumed and planned for in the Livermore General Plan and in accordance with Livermore 2030 population projections. Therefore, the CAP Update would result in ***no cumulative impact*** related to population and housing.

# 15 Public Services

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| 1. Fire protection? | ☐ | ☐ | ☐ | ■ |
| 2. Police protection? | ☐ | ☐ | ☐ | ■ |
| 3. Schools? | ☐ | ☐ | ☐ | ■ |
| 4. Parks? | ☐ | ☐ | ☐ | ■ |
| 5. Other public facilities? | ☐ | ☐ | ☐ | ■ |

*a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

- *Fire protection?*
- *Police protection?*
- *Schools?*
- *Parks?*
- *Other public facilities?*

The CAP Update is a policy document containing programs that are consistent with the Livermore General Plan. Implementation of the CAP Update and its proposed strategies and actions would not result in increases in population or new employment opportunities that could induce population growth, as further discussed in Section 14, *Population and Housing*. As such, the CAP Update would not require the construction of new or physically altered governmental facilities to serve additional population, the construction of which could cause significant environmental impacts. CAP Update Strategies E-1, H-1, WF-1, M-1, and I-1 and Actions F-1.1, F-1.2, and B-2.2 would help to increase community resiliency and reduce vulnerability to the climate change-related hazards and issues

such as flooding, extreme heat, wildfire and electrical grid instability, thereby reducing the burden on local public services related to such natural disasters. Furthermore, future CAP Update projects and actions would be reviewed for consistency with the Livermore General Plan and other applicable local and State regulations related to public services. Therefore, the CAP Update would result in ***no impact*** related to public services in terms of need for the construction of new or altered governmental facilities.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Implementation of CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would not result in increases in population or induce additional population growth beyond that assumed under the Livermore General Plan and in accordance with Livermore 2030 population projections. Therefore, implementation of the CAP Update would not result in substantial cumulative need to expand public services facilities. Therefore, the CAP Update would result in a ***no significant cumulative impact*** related to public services.

# 16 Recreation

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☐ | ■ |
| b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ■ |

*a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

*b. Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Livermore is a primarily urbanized community with parks and recreational spaces incorporated throughout Livermore, including 51 parks and open space areas, as shown in Figure 8-4 of the Livermore General Plan Open Space and Conservation Element. The Livermore General Plan Open Space and Conservation Element incorporates goals and policies to protect open space/recreational resources in Livermore including Goal OSC-5 to develop a full complement of parks and other recreational lands for public use and enjoyment.[100]

The CAP Update is a policy document containing programs that are consistent with Livermore's General Plan, including the recreation and open space policies established in the Livermore Open Space and Conservation Element. CAP Update Action S-1.4 seeks to preserve open space in Livermore, while Action WF-1.4 would reduce wildland fire risks that could result in damage to recreational open space amenities within the city. Additionally, as described in Section 14, *Population and Housing*, the CAP Update would not result in substantial population growth or direct land use changes. As such, implementation of the CAP Update would not result in a substantial physical deterioration of parks or other recreational facilities or result in the need to expand recreational facilities. Therefore, the CAP Update would result in ***no impact*** related to the need for construction of new or altered recreational facilities.

[100] Livermore, City of. 2003. General Plan Open Space and Conservation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1385/637643623283170000>. Accessed May 12, 2022.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Implementation of CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, would not result in increases in population or induce additional population growth beyond that assumed under the Livermore General Plan and in accordance with 2030 population projections. Therefore, implementation of the CAP Update would not result in increased demand for parks or substantial cumulative physical deterioration of parks or other recreational facilities or result in the cumulative need to expand recreational facilities. In addition, the CAP Update includes strategies to preserve open space within the community and reduce wildland fire risk, which aligns with the Livermore General Plan goals. Therefore, implementation of the CAP Update would result in ***no cumulative impact*** related to recreation.

# 17 Transportation

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | ☐ | ☐ | ☐ | ■ |
| b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | ☐ | ☐ | ☐ | ■ |
| c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)? | ☐ | ☐ | ■ | ☐ |
| d. Result in inadequate emergency access? | ☐ | ☐ | ■ | ☐ |

*a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

*b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

The Livermore General Plan Circulation Element includes the following goals:

- **CIR-1:** Provide safe, efficient, comfortable, and convenient mobility for all users.
- **CIR-2:** Promote multi-modal transportation.
- **CIR-3:** Identify and develop a circulation system consistent with the Land Use Element.
- **CIR-4:** Provide a local roadway system for the safe, efficient, and convenient movement of vehicular traffic.
- **CIR-5:** Maintain relatively free-flowing traffic, except where the City has identified intersections or areas of Livermore that are exempt from the citywide standard.
- **CIR-6:** Protect neighborhood quality and community character through circulation planning.
- **CIR-7:** Develop a Downtown circulation system that is pedestrian-oriented and supports Downtown as a destination.
- **CIR-8:** Ensure a well-coordinated regional transportation system that serves Livermore and the surrounding region.
- **CIR-9:** Support and protect safe and efficient aviation operations at the Municipal Airport.
- **CIR-10:** Provide adequate safe and convenient short-and long-term vehicle and bicycle parking for all land uses in Livermore.

- **CIR-11:** Support goods movement within Livermore.[101]

Additionally, the City adopted the Active Transportation Plan in 2018 to make active transportation a safe and pleasant option within Livermore by providing a dedicated bicycle and pedestrian network. The Livermore Active Transportation Plan also implements the Livermore General Plan goals, policies, and programs related to complete streets and multi-modal transportation by building the blueprint for a system of bikeways, walking paths, and trails.[102]

The CAP Update is a policy document containing strategies and policies that are consistent with the Livermore General Plan Circulation Element and Active Transportation Plan. CAP Update Strategy T-2 seeks to improve public transit connections to destinations within and nearby Livermore to make public transit a more attractive mobility option, as well as to expand shared mobility and micro-mobility options in accordance with the Livermore Active Transportation Plan. CAP Update Strategy T-3 includes actions to expand bicycle and pedestrian infrastructure by implementing 50% of the Active Transportation Plan by 2030, promote car-free events, and secure funding for Active Transportation Plan projects. These CAP Update actions would advance active transportation and public transit within Livermore and decrease VMT and associated air pollutants and GHG emissions.

These CAP Update actions would be consistent with the Livermore General Plan Circulation Element and Active Transportation Plan goals to create complete streets, improve multi-modal facilities, reduce VMT and single-occupancy vehicles, encourage active transportation, and reduce vehicle congestion within Livermore. Furthermore, the CAP Update would seek to reduce VMT within Livermore, consistent with CEQA Guidelines section 15064.3, subdivision (b). Therefore, the CAP Update would result in ***no impact*** related to consistency with plans addressing the transportation circulation system and CEQA Guidelines section 15064.3, subdivision (b).

*c. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*

*d. Would the project result in inadequate emergency access?*

The CAP Update is a policy document containing strategies that are consistent with the Livermore General Plan and would not facilitate development beyond that allowed under the Livermore General Plan. Implementation of some CAP Update strategies and actions, such as CAP Strategies F-1 and T-3, that would provide for improvements to multi-modal transportation, new green stormwater infrastructure, may involve construction within the local right-of-way. Construction activities have the potential to require lane closures and, thus, vehicle access and speeds on the affected roadways; however, these impacts would be temporary and access to roadways would generally be maintained throughout project construction. Furthermore, future projects involving work in the public right-of-way would be required to coordinate with the City to ensure appropriate construction staging and adequate vehicular and pedestrian access on adjacent roadways pursuant to LMC Chapter 12.08, Encroachments.[103] Compliance with the LMC would ensure that significant impacts to the circulation system design, including safety impacts and emergency access, would not occur during construction. Upon completion of construction, roadways would continue to serve the

[101] Livermore, City of. 2003. General Plan Circulation Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/1381/637643622447500000>. Accessed May 12, 2022.

[102] Livermore, City of. 2018. Active Transportation Plan. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/4529/637229929948370000>. Accessed May 12, 2022.

[103] Livermore, City of. 2022. Livermore Municipal Code Chapter 12.08. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed May 6, 2022.

needs of emergency responders, vehicles, pedestrians, public transit users, and bicycles. Additionally, the CAP Update does not include projects that would construct new roadways, alter existing roadways, or build new incompatible uses that would result in safety hazards within Livermore. As such, construction of CAP Update projects would not create transportation design hazards or result in inadequate emergency access. Furthermore, the CAP Update would facilitate increased active transportation and public transit use and decreased VMT within Livermore, which in turn would reduce potential transportation hazards and congestion conditions that can hinder emergency response. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to transportation hazards and emergency access.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Cumulative projects anticipated under Livermore General Plan buildout could result in increases in VMT or changes affecting roadway design safety and emergency access. However, the CAP Update is a policy document containing programs that are consistent with the Livermore General Plan and does not propose new development that would increase VMT, require the provisioning of new roadways, or result in roadway safety or emergency access concerns. Rather, the CAP Update strategies and actions promote alternative modes of transportation and reduction of VMT throughout Livermore, consistent with goals contained in the Livermore General Plan Circulation Element and Active Transportation Plan. Therefore, the CAP Update would result in a ***less-than-significant cumulative impact*** related to transportation.

# 18 Tribal Cultural Resources

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |
| a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☐ | ☐ | ■ | ☐ |
| e. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe? | ☐ | ☐ | ■ | ☐ |

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code § 5020.1 (k)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe?*

On August 31, 2022, the ten following Native American Heritage Commission (NAHC)-identified local Native American tribal groups were formally notified that the City initiated environmental review of the CAP Update and were invited to provide consultation:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Muwekma Ohlone Inidian Tribe of the San Francisco Bay Area
- Costanoan Rumsen Carmel Tribe
- North Valley Yokuts Tribe
- Tamien Nation
- Indian Canyon Mutsun Band of Costanoan
- The Confederate Villages of Lisjan
- The Ohlone Indian Tribe
- Wilton Rancheria
- Wuksache Indian Tribe/Eshom Valley Band

Under AB 52, Native American tribes have 30 days to respond and request further project information and formal consultation. As of the date of publication of this Draft IS-ND, no responses have been received, and no formal consultation has been requested. However, any AB 52 responses received from the aforementioned tribes within 30 days of August 31, 2022, will be addressed prior to finalization of this IS-ND.

The CAP Update would not involve land use or zoning changes that would increase development within Livermore but would instead promote sustainable infrastructure development within the urbanized area of Livermore. As a policy document, the CAP Update would also not directly entail ground disturbing activities. Implementation of the CAP Update actions related to building energy efficiency and electrification retrofits, renewable energy production and storage, green stormwater management, transportation, carbon sequestration, and tree planting may include minor construction activities.

CAP Update Strategies E-1, B-1, B-2, M-1, and M-2 and Action I-2.2 promote electrification of existing buildings, energy efficiency upgrades, and installation of renewable energy systems and battery storage facilities to reduce energy use and provide greener renewable electricity within the Livermore. Electrification retrofits and new renewable energy infrastructure may change the physical environment through the need for upgraded service and electrical panels, branch circuit upgrades, and installation of condensate drains to facilitate the installation of electric heat pumps for water and space heating. The physical changes that these upgrades and additions would entail are dependent on the year of building construction and location of electrical and service panels and plumbing connection of condensate drains, which sometimes may include modifications to the interior and/or exterior of buildings for wiring and panel replacement and minor excavation for connection of drainage to sewer systems.

CAP Update Strategies T-1 and T-3 and Actions B-2.4, M-3.2, and T-2.1 encourage the installation of EV charging stations and bicycle, pedestrian, and public transit infrastructure throughout Livermore to increase the use of EVs, public transit, and active transportation. These projects would primarily impact previously disturbed areas within the public right-of-way or within existing parking lots and developments. However, the physical changes these installations and enhancements would entail are dependent on the location of construction for the electric vehicle charging connections, active transportation pathways, and public transit facilities, which in some cases may include minor temporary excavation.

In addition, CAP Update Strategy S-1 and Actions F-1.6 and H-1.2 would increase the planting of urban trees and may include construction of carbon capture and storage facilities to provide

important benefits including carbon sequestration, shade, and stormwater management, while CAP Update Strategy F-1 would include construction of green stormwater infrastructure within the community. These actions could result in ground disturbance related to the construction of new stormwater infrastructure and carbon capture and storage facilities and planting new trees. However, the physical changes these installations and enhancements would entail are dependent on the location of construction.

CAP Update-related projects would be located and designed strategically to reduce ground disturbance to the maximum extent possible. Nonetheless, implementation of these CAP strategies and actions could impact unknown tribal cultural resources during construction that involves below-grade activities in previously undisturbed soils. Future CAP Update-related projects and actions would be reviewed for consistency with applicable local, regional, and State regulations related to tribal cultural resources prior to final siting and construction. Future CAP Update projects would be required to implement BMPs in accordance with Livermore General Plan Community Character Element Goal CC-3 and its associated policies and programs, as well as Livermore Development Code Chapter 9.02 and Chapter 9.13.[104, 105, 106] These policies include a requirement for archaeological testing and monitoring for projects in areas when there is evidence of cultural resources and a requirement during all ground disturbing activities that if potential archaeological resources, including tribal cultural resources, are unearthed, construction must be halted and a qualified professional must be hired to investigate and make recommendations. As such, tribal cultural resources would be protected prior to and/or upon discovery and, thus, impacts would be reduced to a minimal level. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to tribal cultural resources.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. CAP Update projects, in combination with other cumulative projects anticipated under Livermore General Plan buildout, could increase the potential for adverse effects to unknown tribal cultural resources in Livermore. However, impacts to tribal cultural resources are site-specific; accordingly, as required under applicable laws and regulations, potential impacts associated with cumulative developments would be addressed on a case-by-case basis as cumulative project details and locations become known. CAP Update projects and other cumulative projects would be required to comply with the Livermore General Plan and LMC requirements for the halting of construction and proper treatment of any resources discovered during ground disturbance. Therefore, the CAP Update would result in a ***less-than-significant cumulative impact*** related to tribal cultural resources.

[104] Livermore, City of. 2003. General Plan Community Character Element. Available: <https://www.cityoflivermore.net/home/showpublisheddocument/7289/637587704118730000>. Accessed April 28, 2022.

[105] Livermore, City of. 2022. Livermore Development Code Chapter 9.02. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

[106] Livermore, City of. 2022. Livermore Development Code Chapter 9.13. Available: <https://www.codepublishing.com/CA/Livermore/?LivermoreOT.html&?f>. Accessed April 28, 2022.

# 19 Utilities and Service Systems

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☐ | ■ | ☐ |
| b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | ☐ | ☐ | ☐ | ■ |
| c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ■ |
| d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☐ | ☐ | ☐ | ■ |
| e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ■ |

*a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The CAP Update is a policy document that includes strategies to reduce solid waste production and energy and water consumption and does not include site-specific infrastructure designs or project proposals. Implementing the CAP Update would not result in an increase in population and housing nor would it facilitate growth beyond that anticipated by the Livermore General Plan. As such, implementing the CAP Update would not result in new land uses that would require new or expanded water, wastewater, stormwater drainage, natural gas power, or telecommunications

facilities or infrastructure. However, projects resulting from implementation of the CAP Update could include new or expanded electrical power facilities and infrastructure, as well as new local renewable energy generation and storage and green stormwater infrastructure projects. Potential impacts related to these strategies are discussed further below.

## Water Supply Facilities/Infrastructure

California Water Service Company (Cal Water) and the City of Livermore are the retail water suppliers for development within Livermore. The Cal Water Livermore District (the District) and City of Livermore obtain their municipal water supply from a mix groundwater and surface water purchased from Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7). According to the Livermore District Urban Water Management Plan (UWMP) and City of Livermore UWMP, the District purchases approximately 70 percent of its water from Zone 7 and the remaining 30 percent is produced from the City's groundwater wells. Zone 7 uses a combination of water supplies to meet water demand which include imported surface water from the State Water Project, imported surface water transferred from the Byron Bethany Irrigation District, local surface water runoff captured in Del Valle Reservoir, and local groundwater.[107,108] Livermore's distribution system consists of 162 miles of pipelines serving approximately 10,800 properties and 1,500 fire hydrants.[109]

Issues of water supply are addressed in the District UWMP, which is a long-range planning document used to assess current and projected water usage, water supply planning, and conservation and recycling efforts. According to the UWMP, the District has analyzed three different hydrological conditions to determine the reliability of water supplies: average/normal water year, single dry water year, and multiple, dry water year periods. The UWMP indicates that water supplies under the three hydrological conditions will be sufficient to meet demand through 2045. In addition, the UWMP includes a Water Shortage Contingency Plan.[110]

CAP Update Strategy D-1 seeks to decrease community water use by promoting water efficiency retrofits, sustainable landscaping, efficient landscaping irrigation, and increased water reuse. In addition, CAP Update Strategy F-1 and Action M-4.3 would increase green stormwater management infrastructure and permeable surfaces throughout Livermore, improving water infiltration and groundwater recharge. Furthermore, the CAP Update would not result in new land uses, such as increased residential or commercial development, that would contribute to an increase in water use compared to existing conditions or that would require relocation or construction of new water infrastructure. Therefore, the CAP Update would have ***no impact*** related to the need for construction or expansion of water supply facilities and infrastructure.

## Wastewater Treatment Facilities/Infrastructure

The Livermore Water Resources Division collects wastewater within Livermore. The sanitary sewer system consists of over 300 miles of sewer mains, four lift stations, and the Livermore Water

[107] California Water Service Company. 2021. Livermore Water District 2020 Urban Water Management Plan. Available: <https://www.calwater.com/docs/uwmp2020/LIV_2020_UWMP_FINAL.pdf>. Accessed May 16, 2022.

[108] Livermore, City of. 2021. Livermore 2020 Urban Water Management Plan. Available: https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/941062/Resolution_Exhibit_A_2020_UWMP-PUBLIC_DRAFT_05262021.pdf. Accessed October 5, 2022.

[109] Livermore, City of. 2022. Livermore Municipal Water. Available: <https://www.cityoflivermore.net/government/public-works/water-resources/livermore-municipal-water>. Accessed May 16, 2022.

[110] California Water Service Company. 2021. Livermore Water District 2020 Urban Water Management Plan. Available: <https://www.calwater.com/docs/uwmp2020/LIV_2020_UWMP_FINAL.pdf>. Accessed May 16, 2022.

Reclamation Plant.[111] Sewage treatment for the collected wastewater is provided by the Livermore Water Reclamation Plant located at 101 West Jack London Boulevard in Livermore. The Livermore Water Reclamation Plant treats approximately 2.3 billion gallons per year, 1.5 billion gallons of which is discharged into the San Francisco Bay and 0.8 billion gallons of which is reused as recycled water.[112]

The CAP Update would not result in new land uses that would generate sanitary wastewater or otherwise contribute to an increase in wastewater treatment requirements. Rather, CAP Update Strategy D-1 would expand incentives for water fixture retrofits, such as low-flow faucets and toilets, that could help reduce the production and treatment of wastewater within Livermore. Furthermore, the CAP Update would not require relocation or construction of new wastewater treatment infrastructure. Therefore, ***no impact*** related to need for construction or expansion of wastewater treatment facilities and infrastructure would occur.

## Stormwater Drainage Facilities/Infrastructure

The City of Livermore maintains a system of storm drains, gutters, ditches, and arroyos to convey stormwater generated during rain events. As discussed in Section 10, *Hydrology and Water Quality*, implementation of CAP Update Actions related to building electrification and energy and water efficiency upgrades, renewable energy production and storage, transportation, green stormwater infrastructure, carbon sequestration, and urban trees may promote infrastructure development that would involve small-scale construction. Construction of projects implemented in accordance with the CAP Update could result in erosion and potential changes to drainage patterns. However, as described in Section 7, *Geology and Soils*, and Section 10, *Hydrology and Water Quality*, CAP Update projects would be required to comply with local, State, and federal requirements during construction that would control stormwater runoff, erosion, and potential impacts to the stormwater drainage system. Furthermore, CAP Update Strategy F-1 and Action M-4.3 would increase green stormwater management infrastructure and permeable surfaces within the community, that would help to reduce stormwater flows to the City of Livermore storm drainage facilities. Therefore, ***no impact*** related to the need for construction or expansion of stormwater drainage facilities and infrastructure would occur.

## Electric Power Facilities/Infrastructure

Electric power service in Livermore is provided by EBCE using transmission infrastructure operated and maintained by PG&E. The CAP Update would encourage energy efficiency and building electrification in existing residential, commercial, and municipal building stock through new policies and educational campaigns as well as new requirements for proposed new and remodeled buildings through Strategies B-1 and M-2 and Action I-2.2. The CAP Update would also incentivize increased renewable energy production and storage within Livermore through Strategies E-1, B-2, and M-1. In addition, CAP Update Strategy T-1 encourages new EV infrastructure throughout Livermore. These CAP Update strategies and actions may slightly alter electricity demand and, thus electricity facilities/infrastructure development need within Livermore. However, the CAP Update would serve as a pathway to reduce GHG emissions, including emissions related to energy consumption, and other beneficial environmental and sustainability operational effects. These benefits include a

[111] Livermore, City of. 2022. Wastewater Service. Available: < https://www.cityoflivermore.net/government/public-works/water-resources/wastewater-service>. Accessed May 16, 2022.

[112] Livermore, City of. 2022. Livermore Water Reclamation Plant. Available: <https://www.cityoflivermore.net/government/public-works/water-resources/wastewater-service/livermore-water-reclamation-plant>. Accessed May 16, 2022.

reduction in energy consumption. Furthermore, programmatic air quality, energy, GHG emissions, noise, biological resources, and cultural resources impacts related to the implementation of the CAP Update, including construction of new or expanded renewable electrical power generation facilities (i.e., solar arrays and wind turbines), are anticipated to be less than significant (see Section 3, *Air Quality*, Section 4, *Biological Resources*, Section 5, *Cultural Resources*, Section 6, *Energy*, Section 8, *Greenhouse Gas Emissions*, and Section 13, *Noise*). In addition, future CAP Update projects would undergo project-level CEQA review when site locations and details are known and would need to incorporate identified project-level mitigation as applicable. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to construction, expansion, or relocation of electric power facilities and infrastructure.

## Natural Gas Power Facilities/Infrastructure

PG&E provides natural gas services to Livermore. The CAP Update would not involve new land uses that require new or additional natural gas service that could require the construction of new or expanded natural gas facilities. CAP Update Strategy B-1 would encourage building electrification in new and existing buildings to reduce natural gas consumption within Livermore. Implementation of these actions could involve minor alterations to existing natural gas infrastructure as natural gas use is reduced. However, the CAP Update would serve as a pathway to reduce GHG emissions, including emissions related to energy consumption, and other beneficial environmental and sustainability effects. These benefits include a reduction in natural gas consumption. Furthermore, implementation of the CAP Update would not entail future projects related to new or expanded natural gas facilities or infrastructure, Therefore, the CAP Update would result in ***no impact*** related to construction, expansion, or relocation of natural gas facilities and infrastructure.

## Telecommunications Facilities/Infrastructure

Livermore is served by existing telecommunications companies such as AT&T and Comcast. The CAP Update would not alter existing telecommunications facilities and infrastructure and would not involve new land uses or development that would require new telecommunications infrastructure. Therefore, the CAP Update results in ***no impact*** related to need for construction or expansion of telecommunication facilities and infrastructure.

*b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

*c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

The CAP Update is a policy-level document that does not include site-specific infrastructure designs or project proposals, nor does it grant entitlements for development that would have the potential to increase demand for water supply or wastewater treatment. Rather the CAP Update contains strategies and actions to reduce water use and wastewater production, such as Strategy D-1, that encourage water efficiency retrofits to existing buildings and landscaping and water efficiency and reuse requirements for new buildings, that would reduce water demand and wastewater production. Thus, the CAP Update would result in ***no impact*** related to water supply and wastewater treatment.

*d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

*e. Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?*

Livermore Sanitation provides solid waste services for residential and commercial uses within Livermore. Municipal solid waste generated in Livermore is primarily disposed of at the Vasco Road Sanitary Landfill in unincorporated Alameda County just north of Livermore. The Vasco Road Sanitary Landfill has a maximum permitted throughput of 2,518 tons of solid waste per day and has a remaining capacity of 7,379,000 cubic yards.[113]

The CAP Update focuses on sustainable infrastructure development and does not include land use or other policy changes that would result in increased residential, commercial, or other development that would increase solid waste generation within Livermore. CAP Update Strategies W-1 and M-5 seek to reduce the amount of waste produced within Livermore by reducing consumption and increasing diversion in residential, commercial, construction, and municipal operations. These CAP Update strategies align with federal, State, and local regulations aimed at reducing solid waste disposal and increase organic waste diversion, such as Senate Bill 1383. Additionally, because the CAP Update is a policy document that would not facilitate growth beyond that anticipated by the Livermore General Plan, it would not generate solid waste in excess of State or local standards. Therefore, the CAP Update would result in ***no impact*** related to solid waste.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. Cumulative projects anticipated under Livermore General Plan buildout could result in increases in population and additional use of or need for utilities and service systems. However, implementation of the CAP Update and related infrastructure projects would not contribute to increases in population or induce additional population growth that would require additional use of existing utilities or service systems. Rather, implementation of the CAP Update would result in reduced energy and water consumption and solid waste and wastewater production. Therefore, implementation of the CAP Update would result in a ***less-than-significant cumulative impact*** related to utilities and service systems.

[113] California Department of Resources Recovery and Recycling (CalRecycle). 2022. SWIS Facility/Site Activity Details: Vasco Road Sanitary Landfill. Available: <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/9?siteID=8>. Accessed May 16, 2022.

# 20 Wildfire

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | | | | |
| a. Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ■ |
| b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | ☐ | ☐ | ☐ | ■ |
| c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | ☐ | ☐ | ☐ | ■ |
| d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | ☐ | ☐ | ☐ | ■ |

*a. If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

*b. If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

*c. If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

*d. If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

According to Tri-Valley LHMP and Livermore General Plan Public Safety Element, the majority of Livermore, which is primarily urbanized, is at low risk of wildfire. Areas susceptible to wildfire are limited to those portions of Livermore at the urban-wildland fringe. These areas are concentrated along the northern, eastern, and southwestern boundaries, where areas of moderate- and high-fire hazard severity are mapped by the California Department of Forestry and Fire Protection (CAL FIRE). Livermore does not contain and is not adjacent to any areas mapped by CAL FIRE as a very high fire hazard severity zone.[114,115, 116]

Though there are areas within and surrounding Livermore that are at risk of wildfires, the CAP Update is a policy-level document that does not propose new residential, commercial, or institutional development that could be at risk from wildfire, nor does it grant entitlements for development that would have the potential to directly cause or increase the likelihood of wildfire. In addition, the CAP Update includes Strategy WF-1 that aims to reduce the risk of wildfire in the community and improve wildfire preparedness through developing new fire-safe landscaping standards and fire hazard plans, implementing fire fuel load reduction programs, stockpiling personal protective equipment, increasing awareness through public outreach, and operating clean air centers. Thus, the CAP Update would result in ***no impact*** related to wildfire.

## Cumulative Impacts

The cumulative projects scenario is buildout of the 2025 Livermore General Plan plus Livermore population and jobs projections through 2030 and 2045. The CAP Update does not include new habitable development that could be at risk from wildfire, nor does it grant entitlements for development that would have the potential to cause wildfire. Rather, the CAP Update includes Strategy WF-1 to reduce the risk of wildfire and increase wildfire emergency preparedness in Livermore. Therefore, the CAP Update would result in ***no cumulative impact*** related to wildfire.

[114] Livermore, City of. 2003. Livermore General Plan Public Safety Element. Available: <https://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23899>. Accessed May 6, 2022.

[115] Pleasanton, Livermore, and Dublin, Cities of. 2018. Tri-Valley Local Hazard Mitigation Plan. Available: <http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=35090>. Accessed May 5, 2022.

[116] California Department of Forestry and Fire Protection (CAL FIRE). 2022. FHSZ Viewer. Available: <https://egis.fire.ca.gov/FHSZ/>. Accessed May 6, 2022.

# 21 Mandatory Findings of Significance

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| Does the project: | | | | |
| a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☐ | ■ | ☐ |
| b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☐ | ■ | ☐ |
| c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ■ | ☐ |

*a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

The intent of the CAP Update is to reduce GHG emissions and build communitywide resilience through implementation of strategies and actions related to energy use, renewable energy, water consumption, transportation, solid waste, carbon sequestration, drought, flooding, wildfire, extreme heat, and community education and outreach. The CAP Update strategies and actions are consistent with the Livermore General Plan, prepare the community for the impacts of climate change, and encourage residents, businesses, and municipal operations to reduce energy, fuel, and water use, VMT, and solid waste generation and the associated GHG emissions. The CAP Update would not facilitate development that would eliminate or threaten wildlife habitats or eliminate important examples of the major periods of California history or prehistory. Therefore, as discussed

in more detail in Section 4, *Biological Resources*, Section 5, *Cultural Resources*, and Section 18, *Tribal Cultural Resources*, the CAP Update would result in a ***less-than-significant impact*** related to biological and cultural resources.

*b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Implementation of the CAP Update would result in a cumulatively beneficial reduction of GHG and air pollutant emissions across Livermore. In addition, as discussed throughout the respective cumulative impacts discussions within this document, the CAP Update would not result in significant cumulative impacts. Rather, implementation of the CAP Update would be consistent with Livermore General Plan policies aimed at protecting the community from climate hazards, like wildfire and flooding, and at reducing emissions of GHGs and air pollutants, VMT, energy and water supply demands on utilities, and solid waste generation. Therefore, the CAP Update would result in an overall ***less-than-significant cumulative impact*** related to all CEQA topics addressed within this document.

*c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

In general, impacts related to air quality, GHG emissions and climate change, hazards and hazardous materials, noise, and transportation can result in adverse effects on human beings. As detailed in the preceding sections, the CAP Update would not result, either directly or indirectly, in substantial adverse effects related to air quality, GHG emissions, hazards, and noise. As discussed in more detail in Section 3, *Air Quality*, Section 13, *Noise*, and Section 17, *Transportation*, the CAP Update could cause temporary construction impacts related to transportation, air quality, and noise that could, in turn, affect human beings but would not result in substantial adverse effects. However, as discussed throughout this document, the CAP Update would serve as a pathway to reduce GHG emissions, build communitywide resilience, and would result in other positive environmental and sustainability effects. These benefits include reduction in building energy and water consumption, VMT, and solid waste generation as well as improved air quality. Therefore, the CAP Update would result in a ***less-than-significant impact*** related to potential for adverse effects on human beings.

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Rincon prepared this CAP Update Initial Study-Negative Declaration under contract to the City of Livermore. Persons involved in project management, data gathering, environmental impact analysis, quality review, graphics preparation, and document formatting include the following.

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# Appendix A

Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants

## Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants

| Pollutant | Sources | Health Effects | Typical Controls |
|---|---|---|---|
| Ozone ($O_3$) | Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage. | Breathing difficulties, lung tissue damage, vegetation damage, damage to rubber and some plastics. | Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide ($NO_X$) emissions through emission standards, reformulated fuels, inspections programs, and reduced vehicle use. Limit ROG emissions from commercial operations, gasoline refueling facilities, and consumer products. Limit ROG and $NO_X$ emissions from industrial sources such as power plants and manufacturing facilities. |
| Carbon monoxide (CO) | Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, residential heating. | Chest pain in heart patients, headaches, reduced mental alertness. | Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy. |
| Nitrogen dioxide ($NO_2$) | See Carbon Monoxide. | Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain. | Control motor vehicle and industrial combustion emissions. Conserve energy. |
| Sulfur dioxide ($SO_2$) | Coal or oil burning power plants and industries, refineries, diesel engines. | Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain. | Reduce use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy. |
| Respirable particulate matter ($PM_{10}$) | Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants ($NO_X$, $SO_X$, organics). | Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling. | Control dust sources, industrial particulate emissions, woodburning stoves and fireplaces. Reduce secondary pollutants which react to form $PM_{10}$. Conserve energy. |
| Fine particulate matter ($PM_{2.5}$) | Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants ($NO_X$, $SO_X$, organics, and $NH_3$). | Increases respiratory disease, lung damage, cancer, and premature death, reduced visibility, surface soiling. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease. | Reduce combustion emissions from motor vehicles, equipment, industries, and agricultural and residential burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere. |
| Lead | Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint. | Learning disabilities, brain and kidney damage. Control metal smelters. | No lead in gasoline or paint. |
| Sulfur Dioxide ($SO_2$) | Coal or oil burning power plants and industries, refineries, diesel engines. | Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain. | Reduce use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy. |
| Sulfates | Produced by reaction in the air of $SO_2$, (see $SO_2$ sources), a component of acid rain. | Breathing difficulties, aggravates asthma, reduced visibility. | See $SO_2$ |

| Pollutant | Sources | Health Effects | Typical Controls |
|---|---|---|---|
| Hydrogen Sulfide | Geothermal power plants, petroleum production and refining, sewer gas. | Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations). | Control emissions from geothermal power plants, petroleum production and refining, sewers, and sewage treatment plants. |
| Visibility Reducing Particulates | See $PM_{2.5}$ | Reduced visibility (e.g., obscures mountains and other scenery), reduced airport safety. | See $PM_{2.5}$ |
| Vinyl Chloride | Exhaust gases from factories that manufacture or process vinyl chloride (construction, packaging, and transportation industries). | Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer. | Control emissions from plants that manufacture or process vinyl chloride, installation of monitoring systems. |
| Toxic Air Contaminant (TAC) | Combustion engines (stationary and mobile), diesel combustion, storage and use of TAC-containing substances (i.e., gasoline, lead smelting, etc.) | Depends on TAC, but may include cancer, mutagenic and/or teratogenic effects, other acute or chronic health effects. | Toxic Best Available Control Technologies (T-BACT), limit emissions from known sources. |

Source: Compiled by Rincon Consultants, Inc. in April 2022.

# Appendix B

Description of Greenhouse Gases of California Concern

## Description of Greenhouse Gases of California Concern

| Greenhouse Gas | Physical Description and Properties | Global Warming Potential (100 years) | Atmospheric Residence Lifetime (years) | Sources |
|---|---|---|---|---|
| Carbon dioxide ($CO_2$) | Odorless, colorless, natural gas. | 1 | 50–200 | Burning coal, oil, natural gas, and wood; decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; oceanic evaporation; volcanic outgassing; cement production; land use changes |
| Methane ($CH_4$) | Flammable gas and is the main component of natural gas. | 28 | 12 | Geological deposits (natural gas fields) extraction; landfills; fermentation of manure; and decay of organic matter |
| Nitrous oxide ($N_2O$) | Nitrous oxide (laughing gas) is a colorless GHG. | 298 | 114 | Microbial processes in soil and water; fuel combustion; industrial processes |
| Chloro-fluoro-carbons (CFCs) | Nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (level of air at the Earth's surface); formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. | 3,800–8,100 | 45–640 | Refrigerants aerosol propellants; cleaning solvents |
| Hydro-fluoro-carbons (HFCs) | Synthetic human-made chemicals used as a substitute for CFCs and contain carbon, chlorine, and at least one hydrogen atom. | 140 to 11,700 | 1–50,000 | Automobile air conditioners; refrigerants |
| Per-fluoro-carbons (PFCs) | Stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. | 6,500 to 9,200 | 10,000–50,000 | Primary aluminum production; semiconductor manufacturing |
| Sulfur hexafluoride ($SF_6$) | Human-made, inorganic, odorless, colorless, and nontoxic, nonflammable gas. | 22,800 | 3,200 | Electrical power transmission equipment insulation; magnesium industry, semiconductor manufacturing; a tracer gas |
| Nitrogen trifluoride ($NF_3$) | Inorganic, is used as a replacement for PFCs, and is a powerful oxidizing agent. | 17,200 | 740 | Electronics manufacture for semiconductors and liquid crystal displays |

Source: Compiled by Rincon Consultants, Inc. in April 2022.