CITY OF ALBANY CLIMATE ACTION AND ADAPTATION PLAN

December 2019

CONTENTS

Acknowledgments 3

Introduction 4

- A Message from the City of Albany 4
- Our Vision: Albany in 2045 6
- Albany in 2045: How We'll Get There 7
- The Plan at a Glance 8

Understanding Albany's Emissions 9

- Climate Change in Albany 9
- Risk and Vulnerability 10
- Building Climate Resilience 13
- Albany's Greenhouse Gas Emissions 14

Plan Goals 18

- Greenhouse Gas Reduction Targets 18
- Communitywide Goals 20

Progress to Date 24

- Building on a Foundation 24
- Collaboration and Partnerships 25
- Carbon-Free Albany 27

Plan Development 28

- Building it Together 28
- Community Engagement 29
- Alignment with Other City Plans 32

Strategies and Actions 33

- Summary of Strategies and Actions 33
- A Critical Pathway 34
- How to Read the Strategies and Actions 35
- Strategy 1: Advance Active, Shared, and Electric Transportation 36
- Strategy 2: Electrify New and Existing Buildings 39
- Strategy 3: Facilitate a Carbon-Free Economy 44
- Strategy 4: Accelerate Resilience 47

Plan Implementation 51

Appendix A. What You Can Do 52

Appendix B. Partners and Roles 53

ACKNOWLEDGMENTS

City Council

Rochelle Nason, Mayor
Peggy McQuaid, Vice Mayor
Michael Barnes, Council Member
Peter Maass, Council Member
Nick Pilch, Council Member

Climate Action Committee

Thomas Cooper
Eric Larson
Allison Marten
Nick Peterson
Stephanie Siehr
Samantha Smithies
Max Wei
Kate Breeding

Committees & Commissions

City of Albany Traffic & Safety Commission
City of Albany Planning & Zoning Commission
City of Albany Social & Economic Justice Commission
City of Albany Economic Development Committee
City of Albany Parks, Recreation, & Open Space Commission

City Manager

Nicole Almaguer, City Manager
Isabelle Leduc, Assistant City Manager

City of Albany Staff

Jeff Bond, Community Development Director
Mark Hurley, Public Works Director
Justin Fried, Transportation Planner
Claire Griffing, Sustainability & Resilience Manager
Elizabeth Carrade, Sustainability Coordinator
Chelsea Polevy, CivicSpark Climate Fellow
Bianca Hutner, CivicSpark Climate Fellow

Prepared by

Cascadia Consulting Group
Rincon Consultants

Photography

Doug Donaldson, Community Member
Stephanie Warner, SJW Photography
Ben Gripman, EDSET Intern

A MESSAGE FROM THE CITY OF ALBANY

We Have a Climate Emergency

Climate scientists overwhelmingly agree that an increase in greenhouse gases in the atmosphere—carbon dioxide (CO_2) in particular— is causing the steady increase in global temperature, and that burning fossil fuels—coal, oil, and natural gas—is the primary cause of this warming trend. Climate change is already leading to large-scale problems including ocean acidification and rising sea levels; more frequent, extreme, and damaging weather events such as heat waves, storms, heavy rainfall and flooding, and droughts; more frequent and intense wildfires; disrupted ecosystems affecting biodiversity and food production; and an increase in heat-related deaths. Many of these impacts are already being felt in the Bay Area region, including rising sea levels, reduced snowpack in the Sierras, and extreme weather. These impacts carry real social and economic costs.

To avoid these climate impacts, it is imperative to drastically reduce greenhouse gas emissions worldwide. The City of Albany shares the responsibility to mitigate emissions to reduce the impact of our changing climate, including the threat of rising sea levels and rising temperatures. Albany and other cities around the globe are challenged with the momentous responsibility of reducing greenhouse gas emissions to stabilize the global climate while preparing for the effects of climate change.

Our Progress

The City of Albany has been a leader in the fight against climate change, having adopted a Climate Action Plan in 2010. Through energy and water use improvements, waste reduction efforts, and clean technology innovations, the City has already decreased local emissions by 33% from 2004 levels—exceeding the City's 2020 emissions reduction goal ahead of schedule. Albany's default electricity supply is now carbon-free based on action taken by the Albany City Council.

The continued increase in global atmospheric CO_2 concentration requires further action from the City, including powerful policies to supplement local and regional efforts to reduce emissions. Through the Albany City Council's Strategic Vision, Albany is committed to fostering a healthy and sustainable urban village by advancing climate action and implementing programs to further environmental conservation in Albany. Part of the effort to protect Albany's environment includes ensuring long term sustainability and resilience to climate change and its effects.

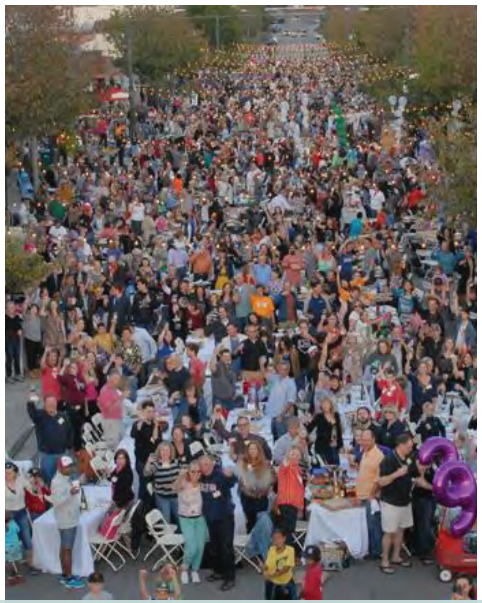
Looking Forward

Albany is a small city with big sustainability goals. The City aims for 70% reductions in greenhouse gas emissions by 2035 and net zero emissions by 2045. This Climate Action and Adaptation Plan focuses on innovative policies and programs to meet these goals, while also prioritizing actions that provide other benefits to the community, such as opportunities to enhance public health, environmental conservation, and urban beautification. It is important to acknowledge that climate action is an investment in the community and local economy, and that there are significant financial, social, and environmental costs of inaction. It is also imperative that actions to address climate change do not negatively affect vulnerable populations, or unfairly impose financial burdens on members of the Albany community. The City Plans to prioritize equity in implementation of the Plan, and ensure that efforts to combat climate change do not disproportionately impact members of the Albany community.

It Takes a (Urban) Village

As a small community with engaged community members, prosperous businesses, and strong leadership, Albany has both the ability and the responsibility to address climate change. Every person in Albany has a role in helping the City meet its climate action goals. As a member of the Albany community, we hope you will participate actively to reduce your carbon footprint, taking advantage of the resources provided by the City and other agencies. Together, we can work to achieve Albany's 2045 carbon neutrality goal. We thank you for choosing to live, study, work, and play in Albany, and for your partnership in working to ensure a vibrant and sustainable urban village now and into the future.

OUR VISION: ALBANY IN 2045



LIVABLE

- **Albany is safe, healthy, and sustainable.** Both people and natural systems thrive.
- **Clean, locally sourced renewable energy** powers our buildings, buses, and cars, improving local air quality.
- **Our economy thrives on low-carbon, low-waste goods and services.** Community members actively share resources.

EQUITABLE

- **Everyone has easy access** to a walkable, bikeable, and affordable neighborhood with ample green space, active and affordable transportation, and a robust sharing economy.
- **Plentiful local green jobs** employ and serve many. The economic benefits of sustainability are shared across the community.
- **Equity drives our sustainability.** Initiatives are developed in collaboration with communities of color and those most at-risk to climate change's impacts.

RESILIENT

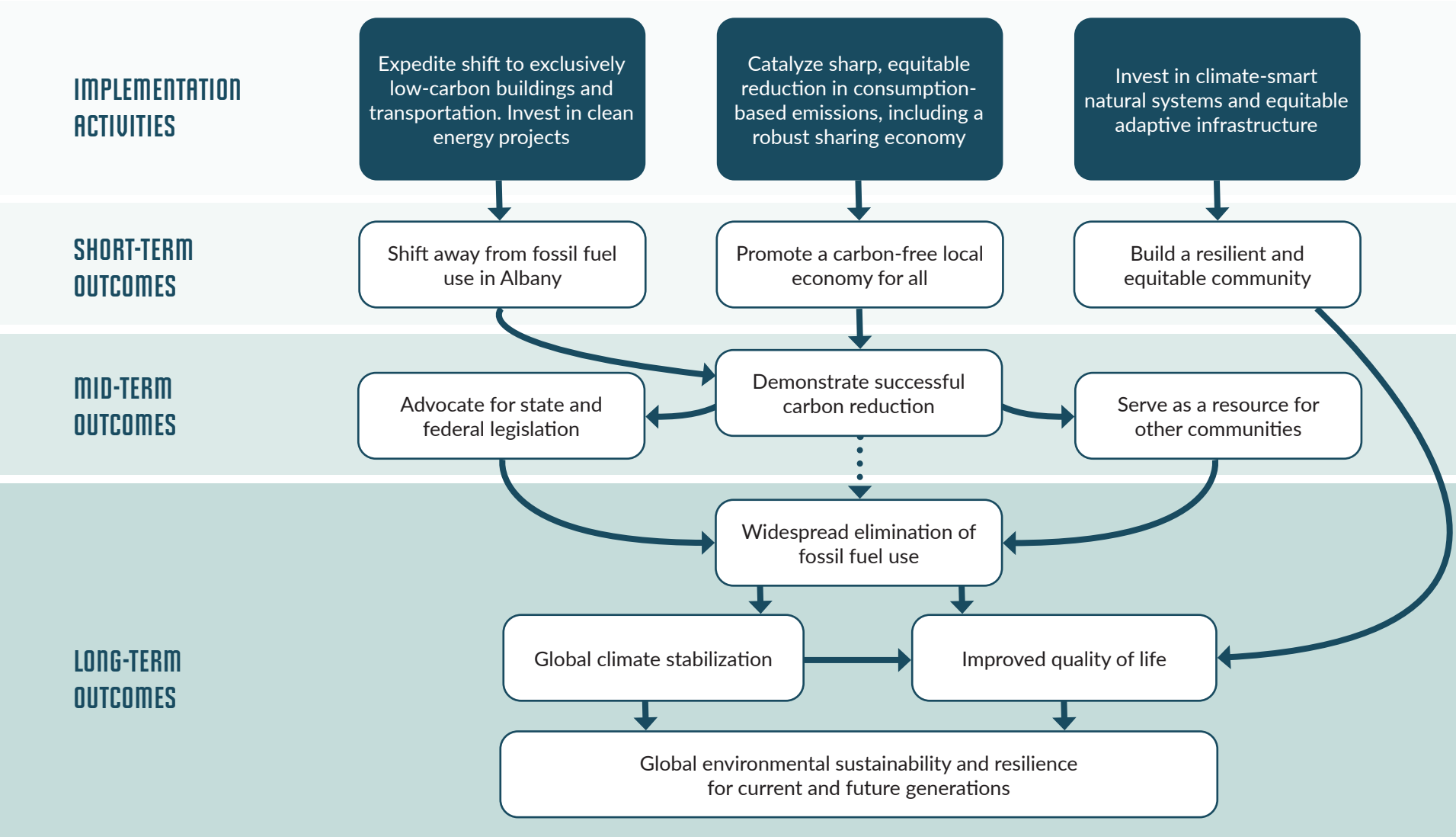
- **People and living systems are resilient** to the local effects of climate change. They have the resources and support to withstand extreme heat, wildfire, smoke, sea level rise, and flooding.
- **Our locally sourced renewable energy supply can provide reliable excess power** in the event of a power failure.

ENGAGED

- **Community members are highly involved** in sustainability activities.
- **The community embraces public transportation systems that are connected** within Albany and enable sustainable travel to neighboring cities.
- **Albany connects with other pioneering cities**, both regionally and globally, to stabilize our climate.

ALBANY IN 2045: HOW WE'LL GET THERE

As we work toward our vision, we hope Albany's pioneering climate action will inspire others to act and have a ripple effect with global impact.



THE PLAN AT A GLANCE

The City of Albany is committed to reducing local greenhouse gas emissions to stabilize the global climate. This Climate Action and Adaptation Plan (CAAP) builds on the success of the City's first Climate Action Plan (CAP) and sets new targets—a 70% reduction in greenhouse gas emissions by 2035, carbon neutrality by 2045, and smart, equitable resilience investments to help us weather the unavoidable—to make sure Albany is livable, equitable, resilient, and engaged for generations to come.

Plan Development

Hundreds of Albany community members informed development of this Plan through community surveys, public workshops, stakeholder focus group meetings, and ongoing engagement with community groups and City of Albany committees and commissions. The citizen-led Climate Action Committee and subcommittees identified, assessed, and formalized the Plan's goals and strategies.

CHALLENGE

- Current emissions are ~53,00 MT CO_2e, largely from transportation and natural gas combustion
- Climate risks include flooding, extreme heat, and wildfire

GOALS

- 70% reduction in greenhouse gas emissions by 2035
- Carbon-neutral by 2045
- Smart, equitable resilience investments

VISION

Albany works together to ensure a vibrant and sustainable urban village that is livable, equitable, resilient, and engaged.

A Comprehensive Plan

The City of Albany has already made great progress: The City has taken action that has reduced community greenhouse gas emissions 33% from 2005 to 2018. However, there is still more that must be done. This Plan focuses on impactful and meaningful opportunities to address climate impacts and foster resilience. It prioritizes actions that not only significantly reduce greenhouse gas emissions, but also demonstrate Albany's innovation and leadership in climate action.

STRATEGIES

Advance active, shared, and electric transportation

The City aims to eliminate fossil fuel use in the transportation sector by making it easy and affordable to choose to walk, bike, or take the bus, and to choose zero emission cars and trucks to move people and goods.

Electrify new and existing buildings

To reduce emissions from buildings, the City Council aims to convert the energy supply to renewable electricity while maximizing local energy generation.

Facilitate a carbon-free economy

The City will catalyze a sharing community and economy, buy low-carbon products, and offer many ways to reduce waste and carbon emissions at home, work, and school.

Accelerate resilience

The City will store carbon in trees, soil, land, and buildings, and ensure that the built environment is equipped with battery energy storage and other resilience measures to make sure all are prepared and can overcome climate change's unavoidable impacts.

Implementation

The City will be responsible for oversight of this Plan and its implementation. Success will be measured by the implementation status of each action, and using key performance indicators. Successful implementation will require engagement from the whole community and recognition of the needs and risks faced by the most vulnerable community members in implementation.

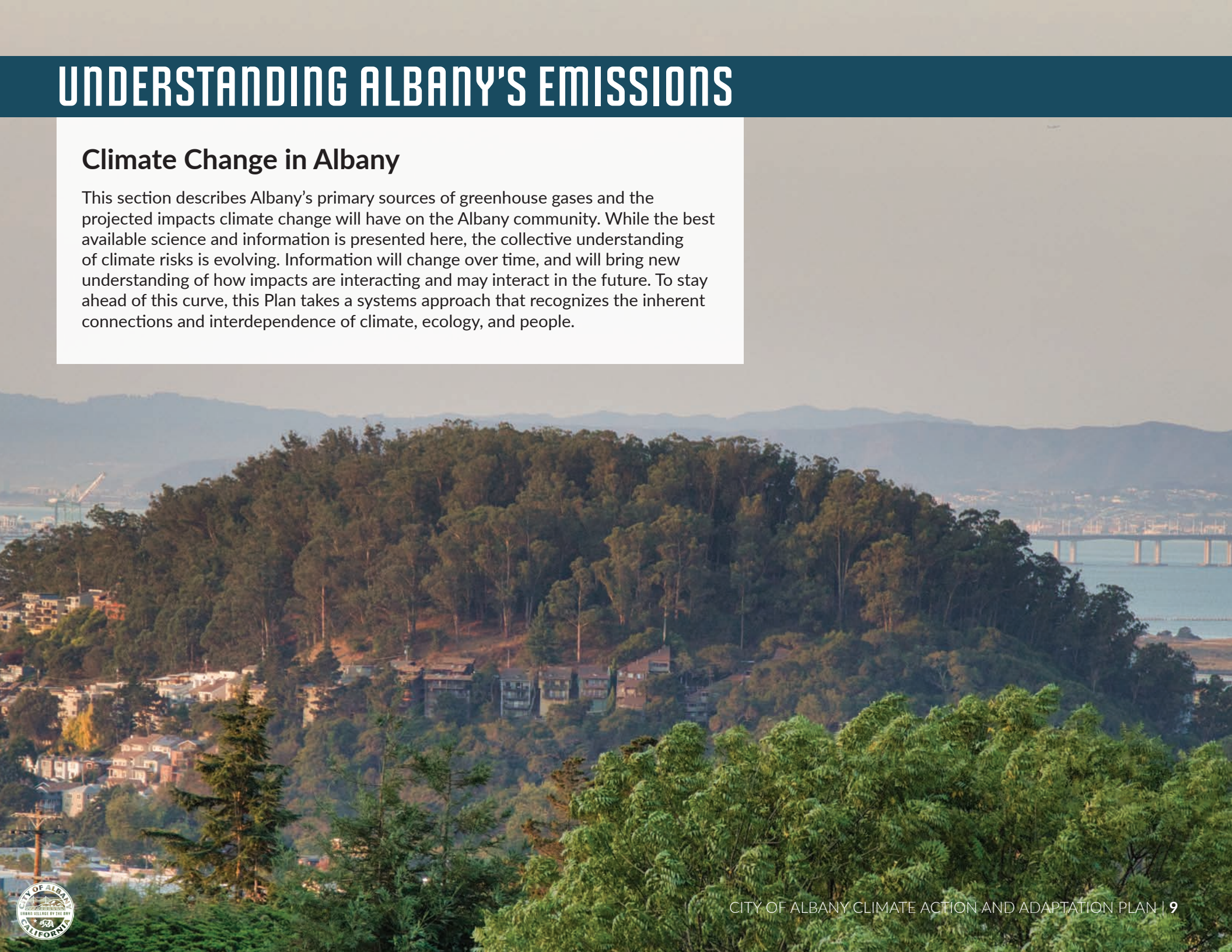
What Does Success Look Like?

The City of Albany aims to demonstrate that sharp and swift carbon emissions reduction is possible, allowing the City to serve as a resource for other communities and advocate effectively for state and federal climate legislation. Ultimately, success will be widespread elimination of fossil fuel use, improved quality of life, and global climate stabilization that ensures a sustainable, resilient City for current and future generations.

UNDERSTANDING ALBANY'S EMISSIONS

Climate Change in Albany

This section describes Albany's primary sources of greenhouse gases and the projected impacts climate change will have on the Albany community. While the best available science and information is presented here, the collective understanding of climate risks is evolving. Information will change over time, and will bring new understanding of how impacts are interacting and may interact in the future. To stay ahead of this curve, this Plan takes a systems approach that recognizes the inherent connections and interdependence of climate, ecology, and people.



Risk and Vulnerability

Albany faces several risks posed by current and anticipated future climate change, outlined below.

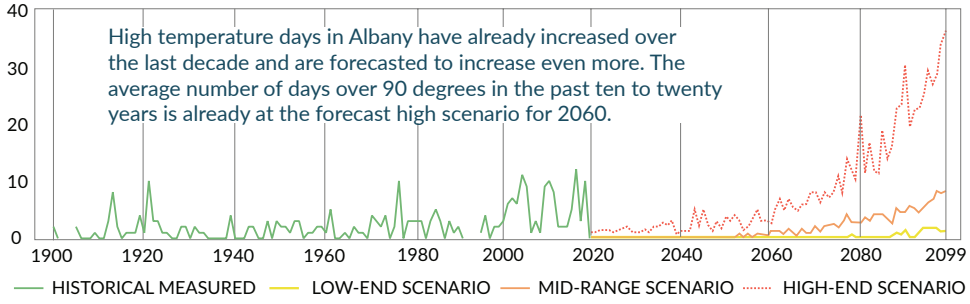
Extreme Heat

As greenhouse gas emissions increase, temperatures are expected to increase globally, placing growing stress on human health, water resources, energy systems, and other assets. Albany's climate is no exception. Temperatures are projected to increase 2-4°F throughout the City by mid-century, with daily maximum temperatures increasing by up to 9°F, and up to 35 additional days of extreme heat (over 90°F) expected by the end of the century under the high emissions scenario.[1] Currently, Albany rarely experiences days over 90°F. Under these conditions, Albany could experience hotter and significantly drier conditions.[2]

As Albany's climate warms, the Albany community will be at higher risk for heat-related illnesses such as heat stroke and heat exhaustion, and extreme heat days could increase the likelihood of heat-related mortality.[3] Homeless populations, those living in dense urban environments, and those with heart disease or high blood pressure are more susceptible to negative health impacts from climate change.

ANNUAL NUMBER OF DAYS ABOVE 90°F

Forecast adapted from Four Twenty Seven as represented on Vizonomy.



Drought

While the overall annual precipitation in California is not expected to change significantly in the coming century, future temperature increases will likely cause longer and more intense droughts in California. The combination of warmer temperatures and drought is likely to decrease water from the Sierra Nevada snowpack, which acts as a natural reservoir by storing and distributing surface water across California. Currently, approximately 60% of water in the Bay Area comes from the Sierra Nevada. Business-as-usual predictions estimate that the average Sierra Nevada snowpack could decline by 19% between 2025-2050, and by 83% between 2075-2100,[3] spelling widespread changes in Albany's water supply and changing the City's natural vegetative landscape.

[1] *Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.*
[2] *University of Maryland, Center for Environmental Science. Map of "What will climate feel like in 60 years?". Data presented are for the high emissions scenario, with a direct line drawn between San Francisco and the location with similar future climate in Palos Verdes Estates. https://fitzlab.shinyapps.io/cityapp/ (accessed May 29, 2019).*
[3] *University of California, Berkeley. California's Fourth Climate Change Assessment. (2018). 7 pp.*

Wildfires

Increasing drought and temperature are projected to increase the area burned by wildfire throughout California. However, it is unclear how Albany may be affected. While there are no emergency assets in wildfire risk zones and the overall area burned in and near Albany may decline, the State-operated Orientation Center for the Blind and the Albany Unified School District Children's Center may be at risk due to their proximity to Albany Hill (moderate fire hazard severity) and the park entrance at the east end of Albany Bulb (moderate to high fire hazard severity).[4,5] Additionally, both Golden Gate Fields and the freeway north of Buchanan Street are close to the park entrance.[6]

Further, smoke from nearby wildfires makes its way into the city, posing public health risks from smoke exposure. With more wildfires projected in this century, populations vulnerable to smoke, such as those with heart and lung conditions, the very young and very old, those who work outside, and those who are pregnant are at increased risk of exposure to smoke-related health effects. Some of the tactics being considered to reduce wildfire risk, such as turning off electricity during periods of high risk, would also cut power to cooling centers. Air conditioning is more likely to be needed during periods of high fire risk because it is likely to be hot, so solutions to this risk need to be considered holistically.

Food Insecurity

Warmer temperatures and longer, more intense droughts will also pose an immense challenge to the agricultural sector in California and beyond. California, which had a $50 billion agricultural industry as of 2018, will face significant losses to major crops. The rising temperatures and increased drought caused by climate change threaten the state's agricultural system. California is expected to lose one million acres of agricultural land by 2030. By 2050, many of California's main exports, including grapes and almonds, will decline by 20%.[7]

California's projected decrease in crop production mirrors the projection for global crop production. Global production of wheat, rice, and corn is estimated to fall between 3%-10% for every degree Celsius of warming.[8] However, while studies have shown decreases in global crop production overall, less attention has been given to the variability of temperature and rainfall, which leads to serious concerns about reliable food availability in the future.[8] Additionally, while the exact effect of climate change on food prices is uncertain, it is worth noting that food prices are projected to increase overall,[8] which could heighten food insecurity, particularly in low-income households in Albany.

[4] *CalAdapt's wildfire projection tool indicates the annual average of area burned may decline for Albany in the 21st century, compared to 1961-1990, under all available combinations of emissions scenarios (medium and high), four climate models (warmer/drier, cooler/wetter, average, complement), and population growth (low, central, high). https://cal-adapt.org/tools/wildfire/#climatevar=fire&scenario=rcp85&population=bau_mu&lat=37.90625&lng=-122.28125&boundary=locagrid&units=ha (accessed June 3, 2019).*

[5] *Information on assets at potential risk from wildfire comes from the draft adaptation plan. Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.*

[6] *Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.*

[7] *CalCAN. Climate Threats to Agriculture. (2019). http://calclimateag.org/climatethreatstoag/ (accessed October 10, 2019).*

[8] *Campbell, et al. Reducing risks to food security from climate change. Global Food Security, 11, 34–43. doi: 10.1016/j.gfs.2016.06.002*

Vector-borne Diseases

Increasing temperatures make vector-borne diseases, carried by insects such as ticks, fleas, and mosquitos, more likely to spread. From 1970 to 2017 in San Francisco, the number of days in which there was a higher risk of disease transmission from mosquitos grew from under 100 days to over 140 days.[9] Higher temperatures not only allow mosquitos to inhabit these areas for longer, but also speed up the growth of the virus in the host. *Aedes aegypti*, a mosquito species found in California, is a carrier of diseases such as the West Nile virus, dengue, Zika, and more. Diseases that were typically found largely in the Southern hemisphere may appear more commonly in the Northern hemisphere, including in California and the Bay Area. However, vital services in the Bay Area like healthcare and housing may mitigate the risk of transmission of these diseases.

Flooding and Sea Level Rise

Climate change is expected to exacerbate flooding through storms and more intense periods of rainfall. Albany is already moderately exposed in the event of a 100-year or 500-year flood: inland flooding from a 100-year flood could compromise assets along Codornices Creek and the railway, including portions of the I-580 and I-80 freeways near the border with Richmond and south of Buchanan Street.[10] These events may become more likely to occur during this century.

Sea level rise can also increase coastal flooding. The projected higher tides and larger storms could lead to significant increases in both coastal and urban flooding and flood damage because higher water levels in tidal creeks and flood control channels will mean less capacity for rainfall runoff. While some creeks already flood when rainstorms coincide with high tides, rising sea levels are likely to cause flooding during smaller, more frequent rainfall events. Sea level rise could also disrupt regional transportation routes by inundating routes out of and around the City. By 2100, there is a 2% chance of annual flooding equivalent to 72 inches of sea level rise, compared to today's levels.

Spotlight: Flooding & Sea Level Rise

Sea level rise and more intense coastal storms could increase flooding and wind- and wave-driven erosion. Inland flooding from a 100-year storm could compromise assets along Codornices Creek and the railway, including portions of the I-580 and I-80 freeways near the border with Richmond and south of Buchanan Street. Without taking significant action to address the rise of global temperatures, Albany could face considerable economic, public health, and public safety consequences from these climate-related risks.

Note: The area shaded in blue indicates the area inundated by 36 inches of sea level rise. Source: OpenStreet Maps and AECOM as represented on Vizonomy. (AECOM and Brian Fulfrost & Associates. (2015). Adapting to Rising Tides: Alameda County Shoreline Vulnerability Assessment Final Report.)

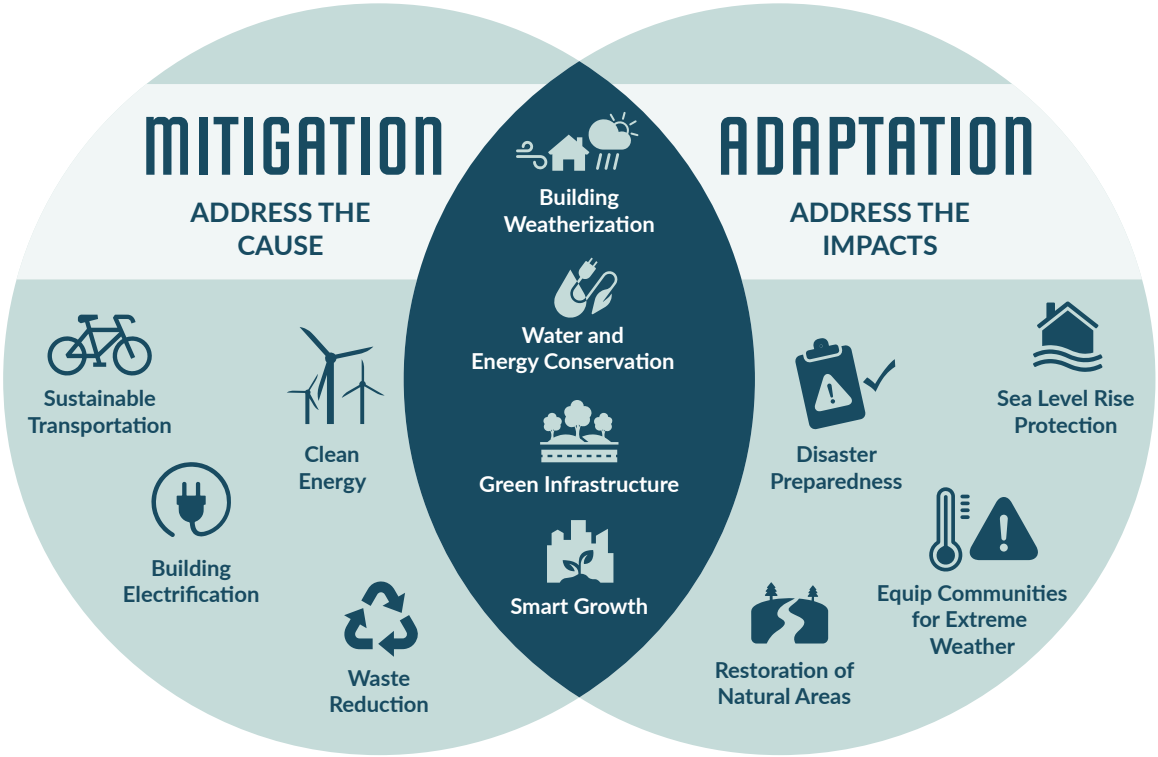
[9] *U.S. Faces a Rise in Mosquito 'Disease Danger Days'. (2018). Retrieved from https://www.climatecentral.org/news/us-faces-a-rise-in-mosquito-disease-danger-days-21903 (accessed October 11, 2019).*

[10] *Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.*

Building Climate Resilience

Responding to climate change involves two approaches:

- **Mitigation:** Preventing climate change through reduction in greenhouse gas emissions (such as burning of fossil fuels for energy and transportation) and increasing carbon "sinks" (oceans, forests, and soil) to store these gases.
- **Adaptation:** Managing the impact of climate change by protecting vulnerable social and biological systems, including behavior change and infrastructure improvements.



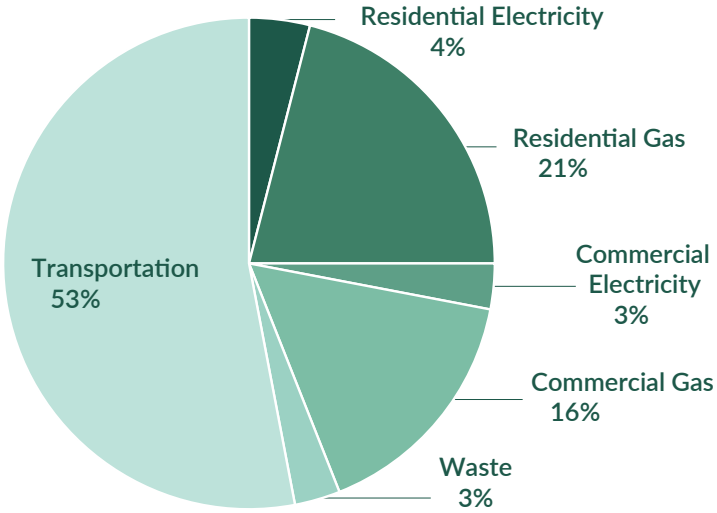
This Climate Action and Adaptation Plan addresses carbon emissions, the primary cause of climate change, in order to slow its effects. While this focus, known as "climate mitigation", is the principal concentration of the City's climate action work, it is also important to prepare for the impacts of a changing climate, especially for those most vulnerable to its effects. While climate change is a global issue, it is felt on a local scale. Cities and municipalities are therefore at the frontline of adaptation. Successful climate change preparation includes both reducing climate-related vulnerabilities, and preparing to respond to and recover from impacts as they occur. The figure above outlines examples of climate mitigation and adaptation activities.

Albany's Greenhouse Gas Emissions

In 2017, Albany's greenhouse gas emissions stemmed mainly from building energy use and transportation (see the *Relative Contributions* pie graph below). Transportation emissions largely originate from passenger vehicles but also include commercial trips and buses. Building energy emissions resulted from non-renewable electricity generation and combustion of natural gas. Solid waste was the smallest source of emissions, however this number does not include emissions tied to production of the goods used and disposed of by the Albany community, which represents a large source of emissions outside of Albany.

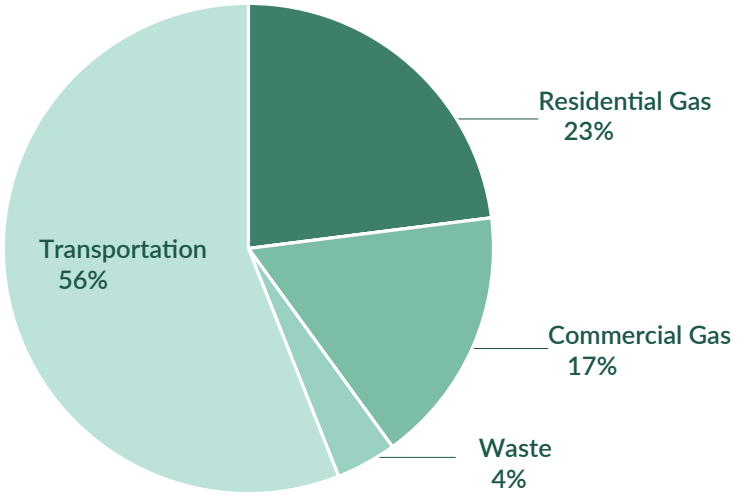
In 2018, the City of Albany City Council took action to enroll the Albany community in Brilliant 100, a 100% carbon-free electricity service offered by East Bay Community Energy (EBCE). This decision reduced Albany's greenhouse gas emissions by an estimated 3,884 $MTCO_2e$—or 7% of 2017 emissions—per year. The remaining emissions in the building sector come from commercial, residential, and industrial natural gas use. The *Estimated 2018 GHG Emissions* pie graph below shows an estimate of the City's emissions now that electricity is 100% carbon-free.

Relative Contributions to Albany's GHG Emissions (2017)



Estimated 2018 GHG Emissions

with 100% carbon-neutral electricity from EBCE



Despite growth in Albany's economy and population, the community greenhouse gas emissions have been declining over time. Overall, emissions have decreased by 27% from 2005 to 2017 (see the *Albany Community GHG Emissions Over Time* bar graph below). When taking into consideration the emissions reduced from opting electricity accounts into EBCE's carbon-free electricity service, it is estimated that the City has reduced overall emissions by 33%. Albany's 2017 per-capita GHG emissions were 3.1 $MTCO_2e$ per person, compared to a U.S. average of 15.8 $MTCO_2e$.

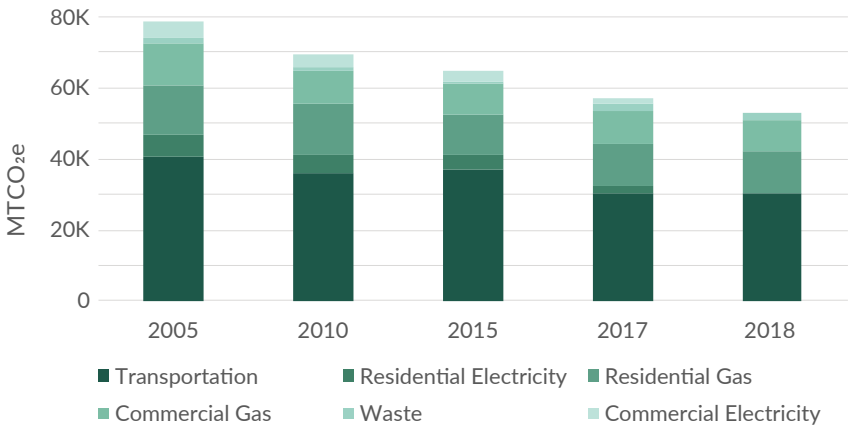
A forecast of Albany's community GHG emissions provides insight into how emissions in Albany may change over time (see *Albany Community GHG Emissions Forecast* bar graph below). The forecast includes projections for population growth, as well as reductions from state measures such as Title 24 building code standards, vehicle efficiency standards, and electric vehicle adoption.

The *GHG Emissions Forecast* figure demonstrates Albany's community greenhouse gas emissions forecast from 2025 to 2050. The forecast shows that current state policies and Albany's default 100% carbon-free electricity will allow Albany's emissions to decrease through 2040. However, the forecast projects only an estimated 41% reduction in community emissions by 2035, which falls short of the GHG reduction targets adopted by the City. Not accounting for additional state policies that may be enacted in the coming years, and assuming there is an increase in population growth in the City, the forecast shows an increase in emissions through 2050.

The results of this forecast demonstrate that Albany will need to take action to achieve its emissions reduction goals, and cannot rely solely on state policy.

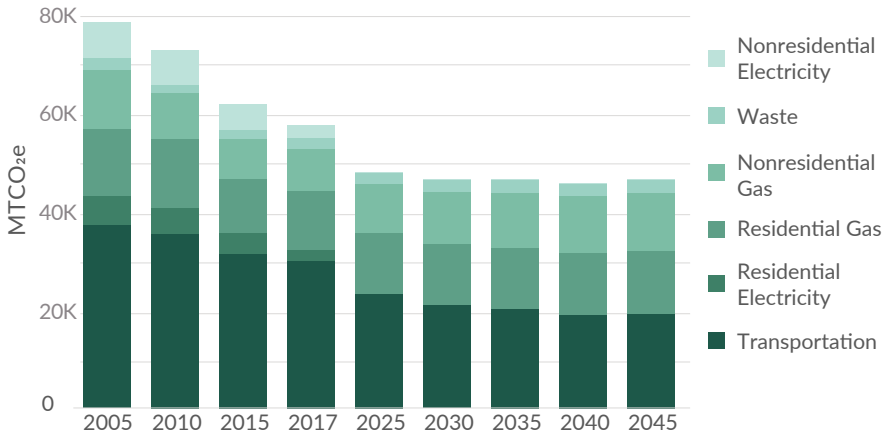
The results of this forecast demonstrate that Albany will need to take action to achieve its emissions reduction goals, and cannot rely solely on state policy. Implementation of this Climate Action and Adaptation Plan is essential if the City of Albany is to reach its 2035 and 2045 climate action goals. As shown above, the two major sources of emissions are projected to be residential and non-residential natural gas (46%) and transportation (49%). These three emissions sources alone make up 95% of Albany's expected greenhouse gas emissions. Therefore, greenhouse gas mitigation measures targeting these sectors and leveraging Albany's 100% carbon-free electricity will be critical to reaching carbon neutrality by 2045.

Albany Community GHG Emissions Over Time



Albany Community GHG Emissions Forecast

From 2025 to 2045



Consumption-Based Emissions and Embodied Carbon

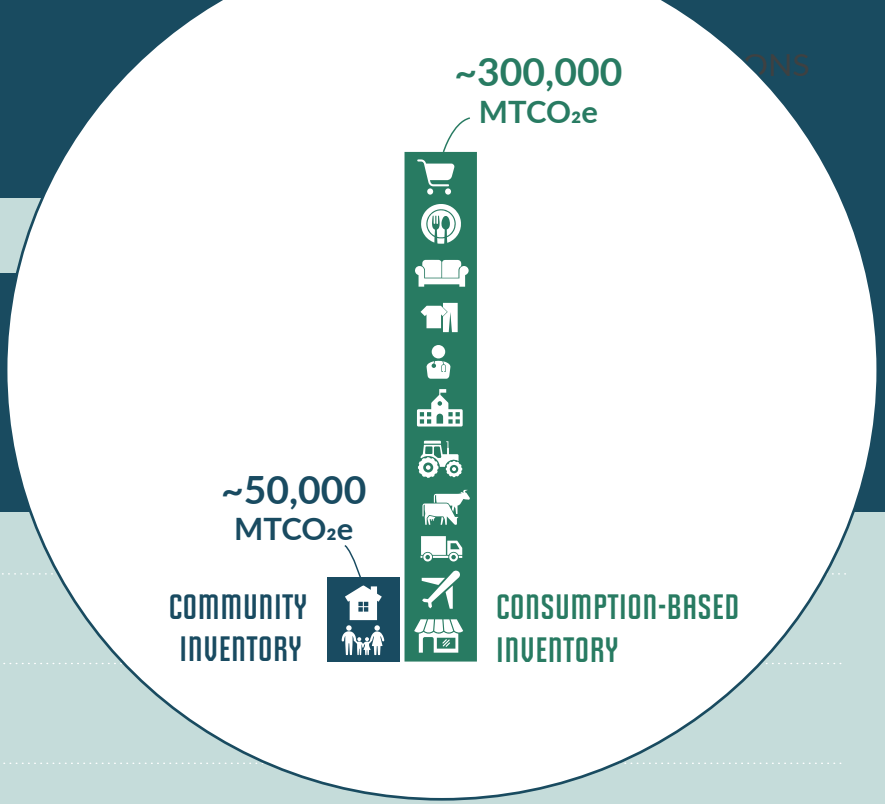
While the above community inventory data represents emissions directly tied to actions taken within Albany, there are also upstream emissions and embodied emissions tied to the products consumed by the Albany community. Emissions from direct burning of fossil fuels make up a relatively minor fraction of a household's overall impact, when compared to the emissions tied to consumption of goods and services, as well as embodied carbon. Because the modern economy is highly integrated and global in scale, a significant portion of the goods and services consumed by the Albany community are produced in other states or nations, meaning that although the greenhouse gases were not emitted in Albany, the emissions are embodied in the good consumed by someone in Albany. While these emissions are not reflected in the City's reduction targets or carbon neutrality goal, this Plan includes strategies to address emissions from consumption with the understanding that their impact goes beyond Albany's borders, and that meaningful climate action requires taking responsibility for these emissions.

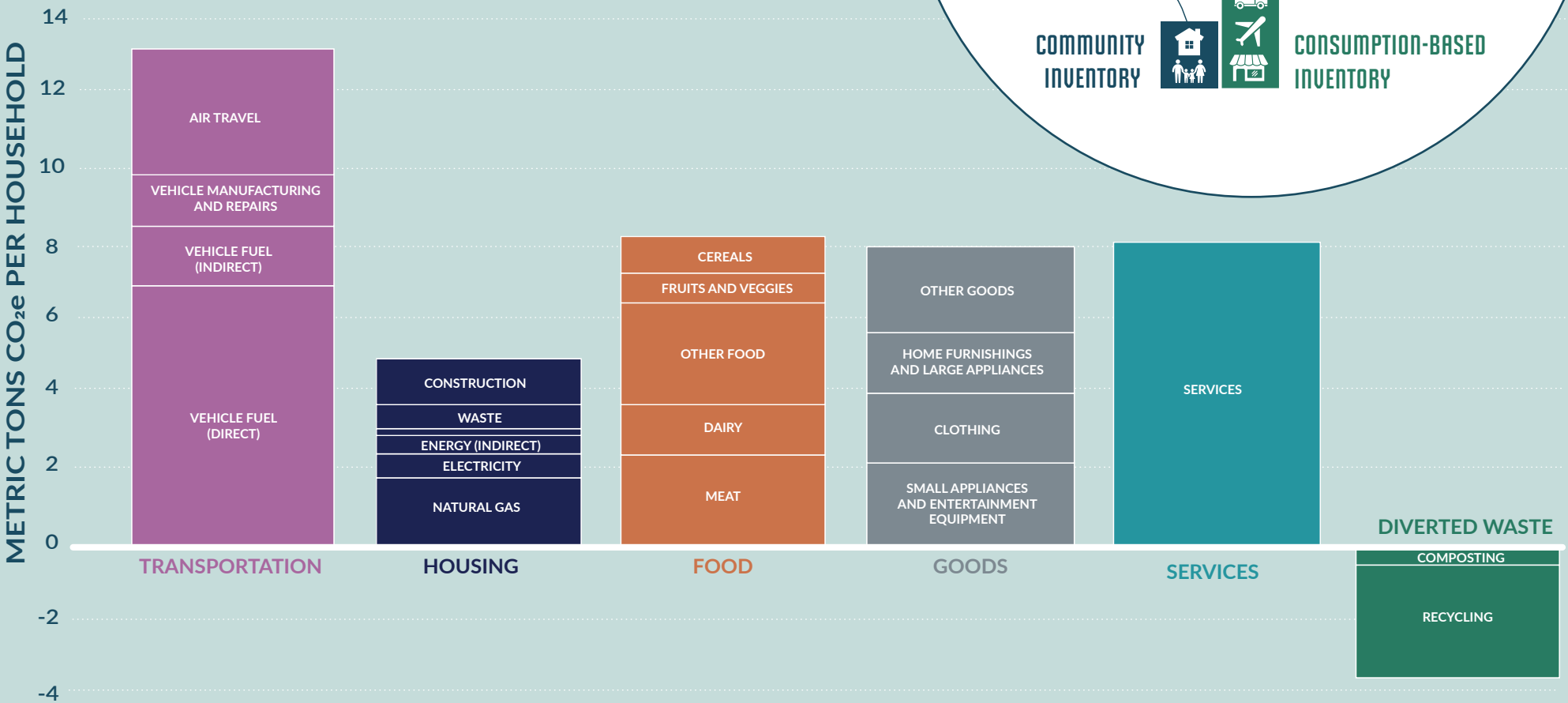
The Bay Area Air Quality Management District (BAAQMD) collaborated with the Cool Climate Network at UC Berkeley to develop a consumption-based inventory of greenhouse gas emissions for the San Francisco Bay Area based on the six greenhouse gases identified in the Kyoto Protocol: CO_2, methane, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The consumption-based inventory estimates the amount of greenhouse gases emitted from the production of goods and services from all over the world that are consumed by the Bay Area community. The inventory is based on a full life-cycle analysis of the emissions generated by the production, shipping, use, and disposal of each product consumed in the Bay Area, regardless of where the greenhouse gas emissions were released to the atmosphere. The inventory estimates emissions for several hundred categories of products within the five basic areas of transportation, housing, food, goods, and services.

Transportation	Emissions embedded in motor vehicle production and maintenance, refining of gasoline and diesel, fuel combustion in motor vehicles, air travel, and public transportation. Emissions related to shipping or freight movement for a given product are included as a component of the emissions attributed to that product (either the housing, food, goods, or services sector, as appropriate).
Housing	Emissions embedded in home construction and maintenance, residential energy use, water use and treatment, and waste disposal.
Food	Emissions embedded in the production, processing, and distribution of food consumed both inside and outside the home.
Goods	Emissions embedded in the production of the full range of consumer products, including home furnishings, clothing, personal care products, electronics, toys, books, etc.
Services	Emissions embedded in the full range of services consumed by Bay Area households, including information and communication, financial services, health care, and education.

CONSUMPTION-BASED INVENTORY

This consumption-based inventory estimates emissions associated with the consumption of goods and services by a community. The consumption-based inventory includes the upstream and downstream impact of household activities, while the community inventory focuses on direct emissions associated with activities in the City.





PLAN GOALS

Greenhouse Gas Reduction Targets

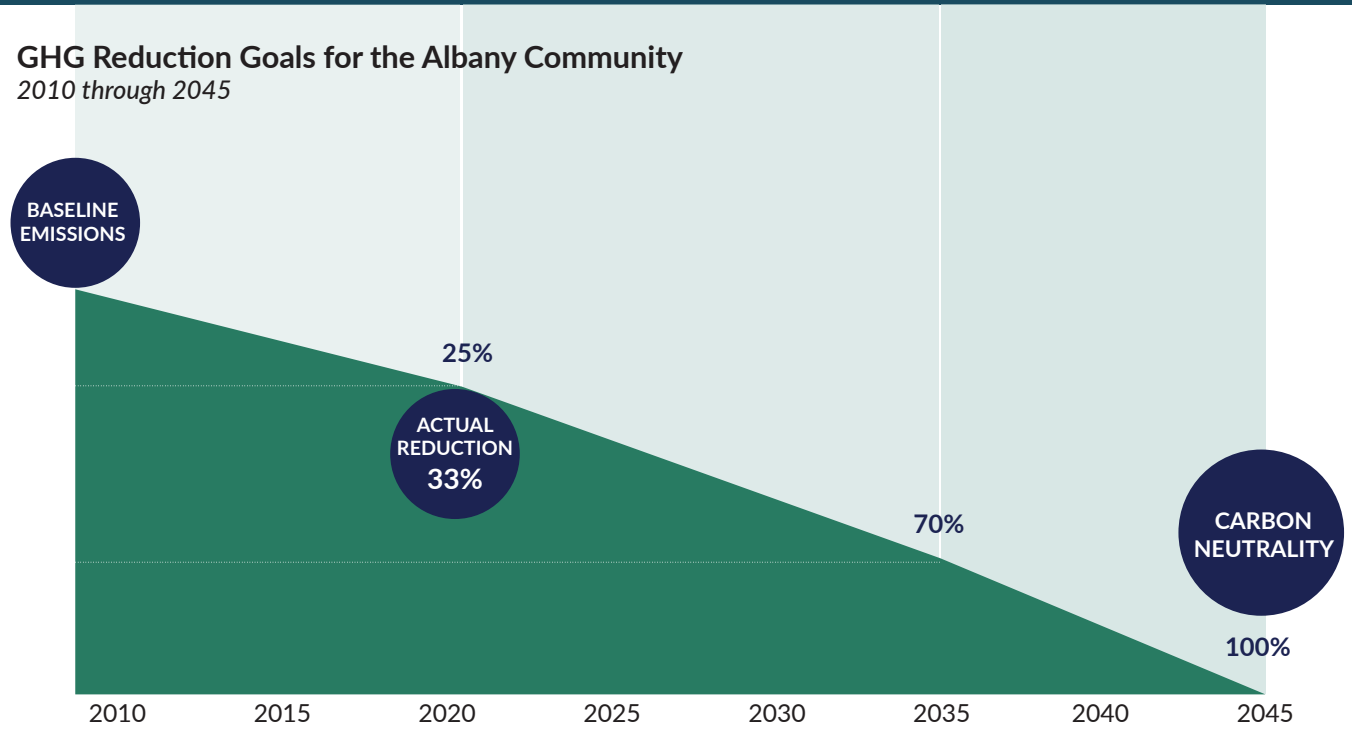
Albany has adopted the following short- and long-term greenhouse gas reductions targets, using a 2004 baseline emissions level:

70% reduction by 2035

Carbon neutrality by 2045

These goals build upon the goals of the Paris Agreement and the State of California, and position Albany to work on par with their peer communities.

GHG Reduction Goals for the Albany Community
2010 through 2045



Federal and State Goals

- While part of the Paris Agreement, the **United States** had a goal to reduce emissions by 80% below 2005 levels by 2050.
- **California** has established targets to reduce emissions to 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050. Executive Order B-55-18, issued by Governor Jerry Brown, calls for a new statewide goal to achieve carbon neutrality by 2045.

Local Government Goals

- The **City of Piedmont (CA)** aims for an 80% greenhouse gas emissions reduction by 2050 (vs. 2005 levels).
- The **City of El Cerrito (CA)** plans to reach a 30% reduction in greenhouse gas emissions by 2035 (vs. 2005 levels).
- The **City of Emeryville (CA)** has greenhouse gas emissions reduction targets of 40% by 2030 and 80% by 2050.
- The **City of Richmond (CA)** has a target for greenhouse gas emissions to reach 1990 levels by 2020 and to reduce emissions 80% by 2050 (vs. 1990 levels).
- The **City of Oakland (CA)** set a goal to achieve a 36% emissions reduction by 2020 and an 83% emissions reduction by 2050 (vs. 2005 levels).

WHAT IS CARBON NEUTRALITY?

Albany defines carbon neutrality as achieving net zero greehouse gas emissions caused by fossil fuel use within the City.

Albany has set a goal to achieve carbon neutrality by 2045. While this goal is challenging, it is not impossible. Ambitious reductions in greenhouse gas emissions will be required to reach carbon neutrality, but technological constraints may prevent reducing emissions to absolute zero by 2050. Therefore, in order to achieve carbon neutrality, every ton of CO_2 still emitted will be balanced with an equivalent amount of CO_2 removed, until the original emissions source is eliminated.

CO_2e removal may come from a combination of carbon-sequestering natural systems and land management practices, as well as from carbon capture technology as it becomes available.

Additionally, Albany has the opportunity to further reduce more global carbon emissions beyond the adopted definition of carbon neutrality through its consumption choices.

HOW TO ACHIEVE CARBON NEUTRALITY

DECARBONIZE

- ✓ Eliminate the use of fossil fuels in buildings and transportation
- ✓ Reduce consumption to decrease fossil fuel use where products are manufactured

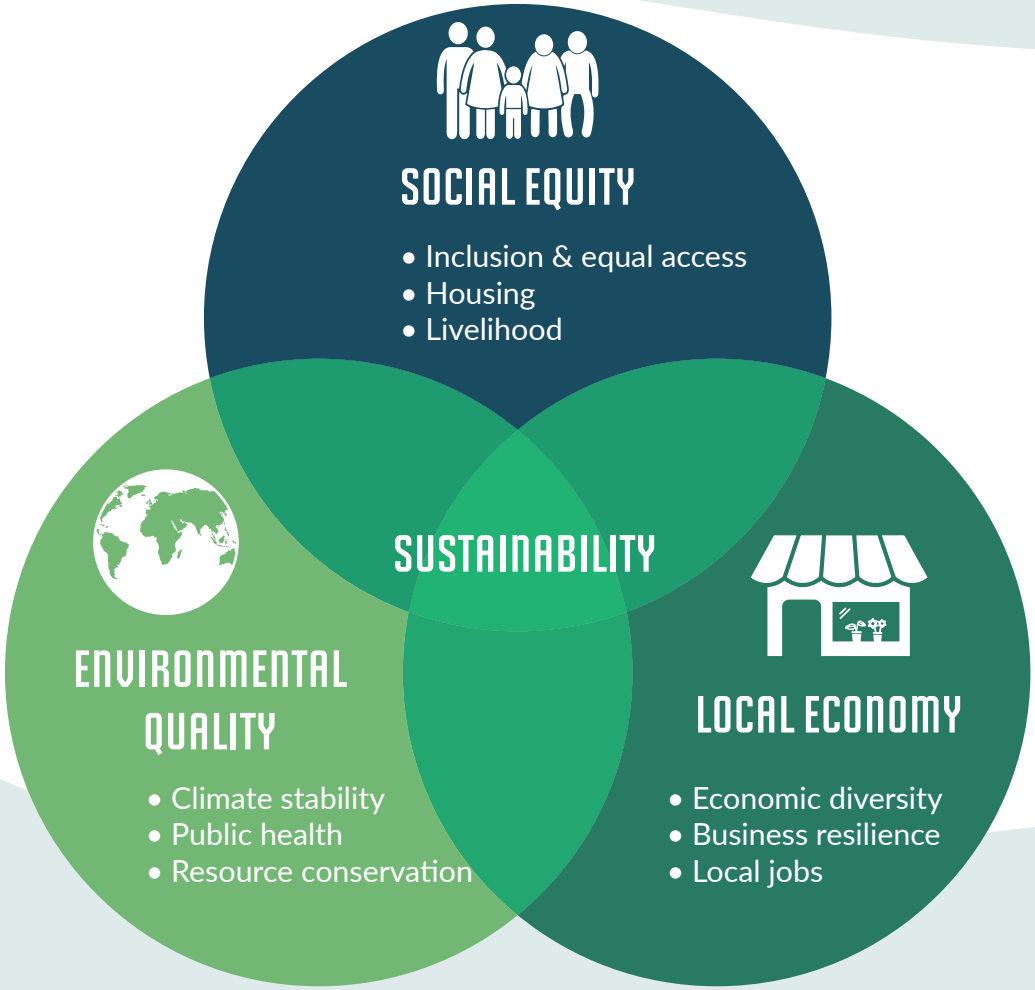
GENERATE

- ✓ Generate clean, renewable energy
- ✓ Focus on local renewable energy and battery storage

SEQUESTER

- ✓ Sequester CO_2 with green infrastructure preservation and improvement
- ✓ Offset any new emissions through carbon-capture technologies

Achieving carbon neutrality will require the transformation of energy and transportation systems, a shift in consumer behavior, and investment in carbon removal technologies as they become available. It will involve individual and City actions, as well as advocacy on the regional and state level.



Communitywide Goals

Implementation of this Plan will result in significant emissions reductions, while enhancing community co-benefits and addressing public health, disaster resilience, affordability, and social equity.

What Sustainability Means

Sustainability is the intersection of social equity, economic stability, and environmental quality. Because of this, our sustainability programs aim to protect and enhance the three "E's"—the environment, the economy, and equity—to improve the well-being of current community members and future generations.

While sustainability can only be achieved by enhancing social equity, environmental quality, and the economy, these concepts also live within each other. A thriving local economy requires a stable and equitable social structure, which requires a healthy environment and stable climate.

Climate and Equity

Equity is central to addressing climate change. Many of the countries that are most responsible for contributing to global emissions, such as the United States, will not endure the worst impacts of climate change. Climate change disproportionately affects the most vulnerable in Albany and globally, including low-income populations, communities of color, those with disabilities, and those experiencing homelessness, many of whom do not have the resources to protect, restore, or adapt to the effects of climate change.

Enhancing equity includes promoting inclusion in the political process, expanding opportunity and equal access to public services, providing equal service quality, and striving for equitable outcomes in areas such as housing, education, health, and employment. The City aims to ensure that the actions recommended in this Plan are equally relevant and accessible to all members of the Albany community, including but not limited to all abilities, ages, races, ethnicities, sexual orientations, gender identifications, socio-economic backgrounds, or religious and cultural beliefs. That is why equity implications of every goal and strategy in this CAAP were considered in the planning process. The City will continue to consider equity and affordability as the programs and policies that result from this CAAP are implemented.

How Equity is Considered in this CAAP

Equity is integrated throughout Albany's CAAP. For example, the following plan elements emphasize and address equitable climate action.

- **An ambitious greenhouse gas emissions reduction target** that acknowledges the responsibility of developed societies to minimize harmful impacts to those who did not contribute to the problem.
- **Actions that focus on supporting vulnerable populations**, who will disproportionately experience many climate change impacts.
- **Including equity in prioritization criteria** for evaluating potential actions.
- **Progress indicators** that track equitable implementation of the plan.
- **An Implementation Plan** that calls for equity to be considered in the execution phase of every action.

WHO IS MOST VULNERABLE TO THE IMPACTS OF CLIMATE CHANGE?

Climate change is perhaps the largest threat to achieving an equitable community on a local and global level. While the impacts of changing weather patterns and extreme weather events pose risks to human health, property, and access to basic resources, not everyone can adapt and respond to these impacts equally. Race, income, age, ability, gender and gender-identity, immigration status, housing status, and other factors all play a role in determining resilience to climate change.

Climate change has the potential to exacerbate existing inequity, and how Albany chooses to address climate change has ripple effects that extend far beyond the City borders. This CAAP seeks to identify and support disadvantaged communities or vulnerable populations that may have more trouble adapting and responding to climate change effects. Actions that not only reduce emissions, but that also enhance public health, increase equity, and provide equitably distributed co-benefits, will be prioritized. At each phase of implementation, the City will ensure that actions taken to reduce emissions and adapt to climate change will not negatively affect some members of the community.

YOUTH AND CLIMATE ACTION

Younger generations have inherited a changing climate that they have not caused, yet they will be responsible for addressing within their lifetimes. Young people from across the globe have started a powerful climate action movement.

Albany's large youth population has the potential to influence the City's Climate Action work in positive ways. In fact, two Albany High School students were members of the City's Climate Action Committee during development of this Plan and provided meaningful input and insight throughout the planning process. The City plans to engage youth in implementation of the Climate Action and Adaptation Plan, and to involve youth and students in future climate action endeavors.

PROGRESS TO DATE

Building on a Foundation

This City of Albany Climate Action and Adaptation Plan builds on the significant progress already made by the City government and the Albany community. Albany joined the Alameda County Climate Protection Project and ICLEI in 2006. In 2007, the City Council formed a Sustainability Committee (now the Climate Action Committee) of Council appointees to advise Council on greenhouse gas reduction strategies and other sustainability initiatives. In 2008, the City received funding jointly with City of Piedmont from the Bay Area Air Quality Management District (BAAQMD) to fund the preparation of a Climate Action Plan (CAP). The Sustainability Committee met multiple times with the consultants to guide the development process, hosted community engagement events, and conducted surveys at community centers. The CAP was adopted by the City Council in April 2010. The CAP outlined a course of action for the City and the Albany community to reduce greenhouse gas emissions 25% by 2020. Successful implementation of the CAP has resulted in a 33% reduction in greenhouse gas emissions from 2005 to 2018.

Key actions in the City's 2010 CAP are either accomplished or in progress. Successful CAP programs have included commercial and residential energy efficiency partnerships, municipal building upgrades and LED streetlights, implementation of the City's Active Transportation Plan and Safe Routes to School Program, execution of land use and waste reduction policies, and joining East Bay Community Energy and making the 100% carbon-free electricity service the default service for all Albany municipal, industrial, and residential accounts. The City continues to work toward greenhouse gas emissions reduction goals by implementing CAP measures that are in progress or ongoing, focusing specifically on energy efficiency upgrades, renewable energy, and clean and active transportation projects.

The City has also pursued several efforts to increase resilience. The Albany Neck & Bulb Transition Study considered anticipated sea level rise scenarios when selecting a suite of measures to improve public access, safety, recreation and art; enhance habitat; and protect shorelines. The Local Hazard Mitigation Plan provides detailed information about the City's exposure to climate and non-climate risks, information that is crucial to develop climate actions that respond to both climate and non-climate risks. The Draft Adaptation Plan provides detailed information about climate hazards, highlights where a regional approach to adaptation is needed, and identifies resilience actions that address climate change, existing hazards, and risks to some of Albany's most vulnerable populations.

Albany as a Leader in Climate Action

Cities like Albany have a critical role in mitigating and adapting to climate change. City-level action can be nimble, decisive, proactive, and grounded in the experiences of local communities.

Albany is a climate leader. The City has demonstrated this by supporting the Paris Climate Agreement, joining the Climate Mayors organization, and making significant progress on 2010 CAP measures, among other initiatives.

The City is well-positioned to take on even more, with its engaged community, walkable business district, and committed leadership. The City's strong regional partnerships, diverse transit options, and position within an innovative and well-resourced region will also support effective action. Additionally, Albany's large youth population is a particularly powerful voice.

Individual community members, businesses, and the City of Albany together can continue to lead in climate action.

Collaboration and Partnerships

The City works with partners in the regional community, across the state, and around the globe, as it cannot achieve its climate goals alone. The City must promote innovative collaboration between public, private, and nonprofit organizations, and engage community groups and individuals.[13]

OUR ROLE

The City of Albany works with partners in our community, across the state, and around the globe to:

- **Set and enforce local policy**
- **Administer programs**
- **Provide education and outreach**
- **Advocate on the regional, state, and federal level**
- **Reduce emissions from municipal operations**

[13] *See Appendix C for more information on the City of Albany's partners and their roles.*

Partnership Spotlight: East Bay Community Energy

Albany's first Climate Action Plan identified joining a Community Choice Aggregation (CCA) Program as a priority for reducing greenhouse gas emissions. The Sustainability Committee (now Climate Action Committee) began evaluating the process and benefits of joining a CCA program in 2012. On November 21, 2016, the City Council approved a Joint Powers Authority Agreement to join EBCE.

In addition to joining EBCE, the Sustainability Committee and Council saw an opportunity to drastically decrease emissions from electricity in Albany: make EBCE's Brilliant 100 service (100% carbon-free) the default electricity service for all municipal, commercial, industrial, and residential accounts in Albany. As a result, Albany saves an estimated 3,844 $MTCO_2e$ each year, and eliminates nearly all greenhouse gas emissions associated with electricity within the City.

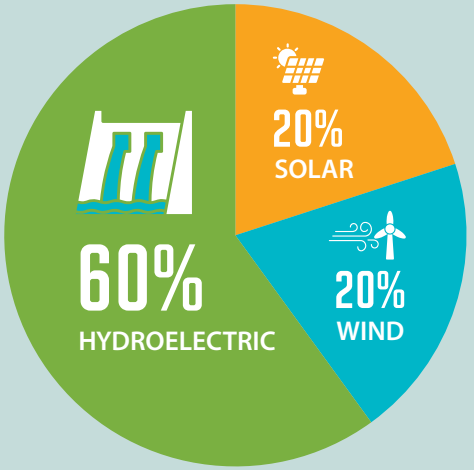
Albany's success in joining a CCA and opting up all residential, commercial, industrial, and municipal accounts laid the foundation for many measures that are included within this updated Climate Action and Adaptation Plan. For example, by focusing on switching natural gas appliances to all-electric appliances that can run on EBCE's 100% carbon-free electricity, Albany can further reduce its energy emissions and bring the City closer to carbon neutrality.

How does EBCE do it?

Source
EBCE
buy and build cleaner energy

Delivery
PG&E
deliver energy, repair lines, handle billing

Customer
You
benefit from cleaner energy, local control



What is EBCE's Brilliant 100 service?

EBCE's Brilliant 100 electricity service is at least 40% renewable energy generated from solar and wind, and an additional 60% carbon-free energy generated from large hydroelectric.

JOIN THE CARBON-FREE ALBANY CHALLENGE

The Carbon-Free Albany platform hosts information and resources for individuals to reduce their carbon footprint, including national, state, and local resources and incentives that can help. Carbon-Free Albany will serve as a platform for continued community engagement with the Climate Action and Adaptation Plan, and other sustainability initiatives in the City of Albany. We hope you will actively engage with the Carbon-Free Albany platform to reduce your carbon footprint. Together, we can achieve Albany's goal of reaching carbon neutrality by 2045.

www.carbonfreealbany.org

CARBON-FRE ALBANY

PLAN DEVELOPMENT

Building it Together

This Plan represents the culmination of over a year-long, communitywide development process. In designing the planning process, the City sought to solicit local expertise, bring in diverse perspectives, and tie engagement into existing activities and processes. The goal was to craft a Plan that reflects and leverages the shared vision and momentum of the community.

This CAAP was unanimously adopted by the Albany City Council on December 2, 2019.

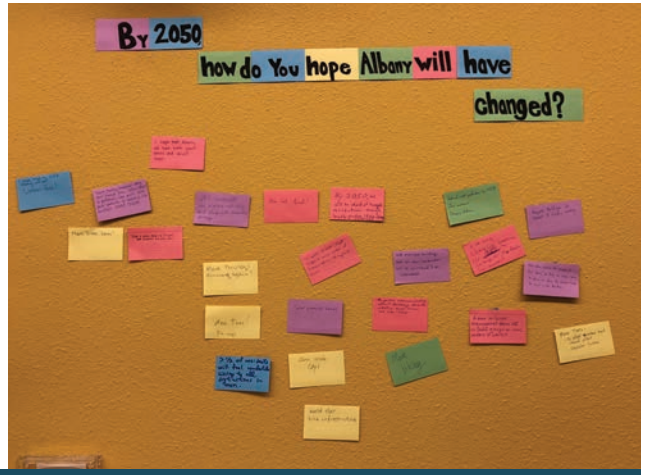
Plan Development Timeline

August 2018 through December 2019

Community Engagement

This Climate Action and Adaptation Plan incorporates the Albany community's ideas and priorities, and the recurring themes that resulted from extensive community engagement during the planning process.

At the Climate Action and Adaptation Plan Community Workshop in January 2019, community members were prompted to envision Albany in 2050. The responses the City received painted a picture of a more walkable, bikeable, forested, and resilient Albany. The comments received from this activity, as well as the comments received from surveys, stakeholder meetings, and at the Climate Action Committee meetings were instrumental in the development of the Climate Action and Adaptation Plan.



Key Elements of the Community Engagement Process

Climate Action Committee and Subcommittees

The City's Climate Action Committee (formerly Sustainability Committee) is a Council-appointed advisory body, consisting of seven members of the Albany community, which serves as a technical advisory committee regarding matters related to climate action. The Climate Action Committee met on an ongoing basis throughout the planning process to identify, assess, and formalize the goals and strategies of the Plan. Topic area-focused subcommittees also conducted more detailed review and analysis of topics including transportation, resilience, consumption, and electrification. All committee meetings were open to the public, with opportunities for public comment.

Community Surveys

The City administered two online communitywide surveys: 1) an initial survey to gauge community priorities, concerns, and ideas and 2) a second survey that was distributed to solicit feedback on the draft Plan.

Public Workshop

The City facilitated a public workshop in January 2019 to generate Albany-specific strategies and actions for the Plan. The workshop included interactive stations covering a variety of climate-related topics that allowed participants to voice their preferences and present their ideas for mitigation and adaptation measures for the Plan.

Stakeholder Focus Groups

City staff organized focus group meetings with four key stakeholder groups to determine priorities and feasibility of potential strategies: 1) landlords and property owners, 2) transportation stakeholders, 3) business associations and local business owners, and 4) green infrastructure stakeholders.

Community Group Engagement

City staff presented on the Climate Action and Adaptation Plan and the Carbon-Free Albany platform at several community group meetings.

Engagement with City Groups

The draft Climate Action and Adaptation Plan was presented to the Parks, Recreation, and Open Space Commission; Social and Economic Justice Commission; Traffic and Safety Commission; Planning and Zoning Commission; Economic Development Committee; the Climate Action Committee; and City Council. Feedback from these Committee and Commission meetings was incorporated into the final Plan.

Channels of Communication

The City communicated with community members throughout the planning process via the following channels: City website, eNews, and enotifications; social media (Nextdoor & Facebook); CAP 2.0 email list; informational flyers at City Hall, Senior Center, Community Center; meetings and events.

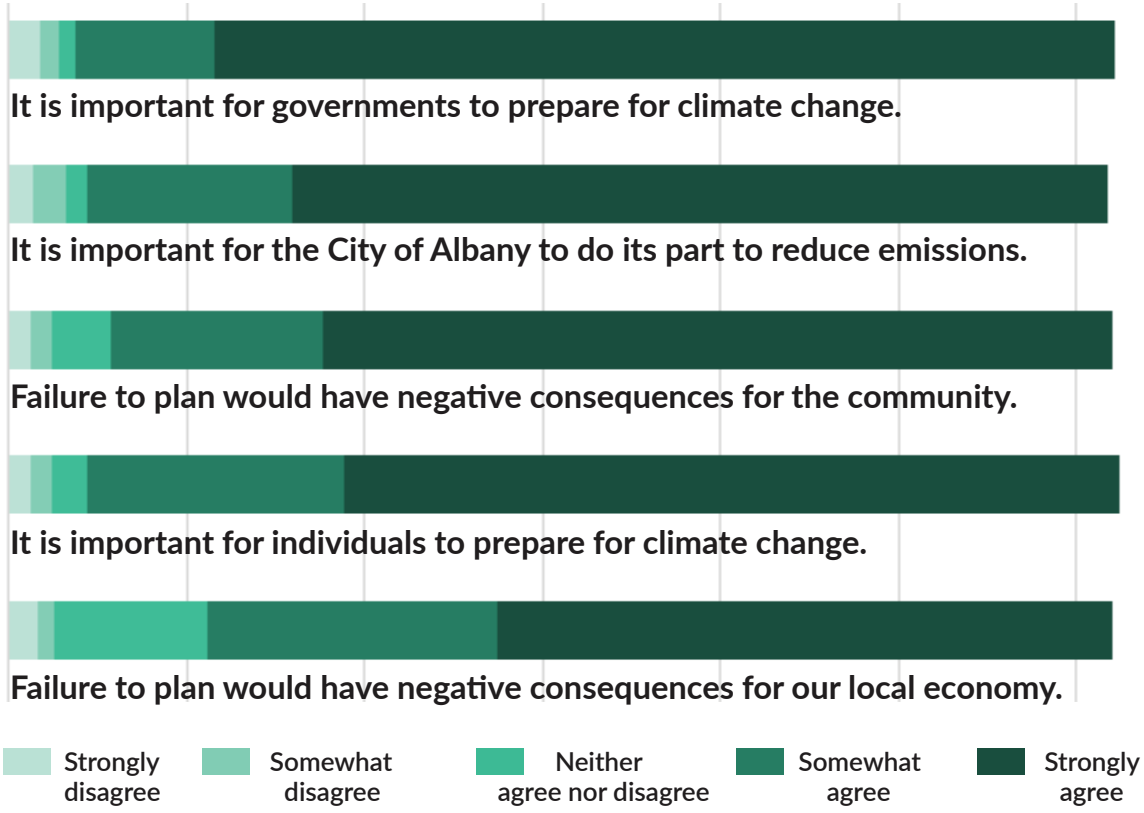
Community Priorities

The City collected over 300 responses to a community survey in the fall of 2018. The survey responses indicated that respondents agree that it is important for local governments, and the City of Albany specifically, to do their part to mitigate and prepare for the effects of climate change.

Survey responses also indicated that the respondents believe that the City of Albany's role in addressing climate change is to engage the Albany community in both public and private greenhouse gas emissions reduction strategies, as well as consider public health, environmental impact, and minimization of resource use when developing the Climate Action and Adaptation Plan actions.

Community Priorities

as indicated with level of agreement with the following statements



Recurring Themes

From both individual comments and general feedback, it became clear that the Albany community wants to address the following themes in the Climate Action and Adaptation Plan: active transportation, electrification, trees and green space, and smarter consumption. The themes that emerged at each stage of the planning process guided development of the objectives and strategies that make up the Plan, ensuring that the Plan reflects the Albany community's vision for reducing emissions and achieving carbon neutrality by 2045.

Active Transportation

Members of the Albany community hope to transition to a walkable, bikeable City for all, and reduce demand for gasoline-powered vehicles.

WE HEARD

- "World class bike infrastructure"
- "Use public transit of all types (BART, buses, bike share) and active transportation of all types (walking, biking, scooters) to keep your emissions low!"

Electrification

The Albany community recognizes the importance of reducing reliance on vehicles and appliances that run on carbon-emitting fuels such as gasoline and natural gas, both in the public and private spheres.

WE HEARD

- "Support transition to e-vehicles"
- "Prohibiting natural gas in new buildings!"

Smarter Consumption

The community highlighted the importance of understanding the lifecycle emissions of goods and services and communicating that to the wider community.

WE HEARD

- "Consider where businesses/industry source materials to reduce GHG/waste pre-consumption"
- "Participate in regional approach to reducing single-use plastics"

Trees and Green Space

Community members emphasized that plants and trees are desirable because they not only sequester carbon from the atmosphere, but also provide many co-benefits such as shade, urban beautification, and wildlife habitat.

WE HEARD

- "Albany needs more trees, both for climate change and beautification"
- "Plant & preserve the urban forest (trees)"

Alignment with Other City Plans

Climate change is a complex, cross-cutting issue that spans traditional sectors and siloes. Furthermore, the Climate Action and Adaptation Plan will not be implemented in a vacuum, but rather within an engaged and active community that is already working to improve quality of life through planning efforts, initiatives, and projects. This Plan recognizes, connects to, and in some cases builds on these existing activities.

Alignment with Other City Plans

City of Albany General Plan

The Albany General Plan presents a comprehensive long-term plan for the City to guide consistent decisions around development, growth, and conservation in Albany. The General Plan details Albany's future goals, along with the policies and actions such as transit-oriented development, green building, low-carbon energy sources, and waste reduction needed to achieve those goals.

Active Transportation Plan

The Active Transportation Plan recognizes the importance of walking and biking for reducing traffic and air pollution. This Plan presents opportunities to make walking and cycling in Albany more safe, comfortable, convenient, and enjoyable through the implementation of new policies, programs, and development standards.

Local Hazard Mitigation Plan

The Local Hazard Mitigation Plan identifies opportunities to reduce the natural and human-caused risks of greatest concern for Albany's community, such as earthquakes, infrastructure failure, and wildfire, among others. Within the plan, hazards are ranked by probability and magnitude of risk, and strategies for mitigating each hazard are outlined.

Economic Development Strategic Plan

The Economic Development Strategic Plan outlines targeted policies and programs to enhance the business climate in Albany for the next five years.

Green Stormwater Infrastructure Plan

The Green Stormwater Infrastructure Plan uses certain trees, plants, and other vegetation to slow stormwater and remove pollutants before the water enters the drain. Slowing stormwater can reduce the likelihood or intensity of flooding, while trees and other vegetation sequester carbon and provide shade.

Other Plans

The Albany Neck & Bulb Transition Study incorporates anticipated sea level rise in its recommendations to enhance habitat, protect shorelines, and transform the Neck and Bulb into an active public green space with walking paths, biking trails, and dedicated areas for dogs, bird watching, and public art. The Albany Hill Creekside Master Plan uses vegetation management and trail maintenance to reduce fire hazard, control for erosion, and support diverse habitat and wildlife.

STRATEGIES AND ACTIONS

Summary of Strategies and Actions

This City of Albany Climate Action and Adaptation Plan is centered on four overarching strategies:

Advance active, shared, and electric transportation

This strategy addresses one of the top emissions sources by focusing on active transportation and electrifying vehicles.

Electrify new and existing buildings

This strategy leverages and sets the foundation for long-term savings from clean electricity through electrification of new and existing construction (e.g. installing heat pump hot water heaters and utilizing sustainable building materials) with the goal of eliminating natural gas use in buildings.

Facilitate a carbon-free economy

This strategy commits the City to choosing low- or no-carbon options for typically high-emissions purchases (e.g., concrete, fuel, fleet), while incentivizing individuals' actions to reduce waste and carbon in their daily lives.

Accelerate resilience

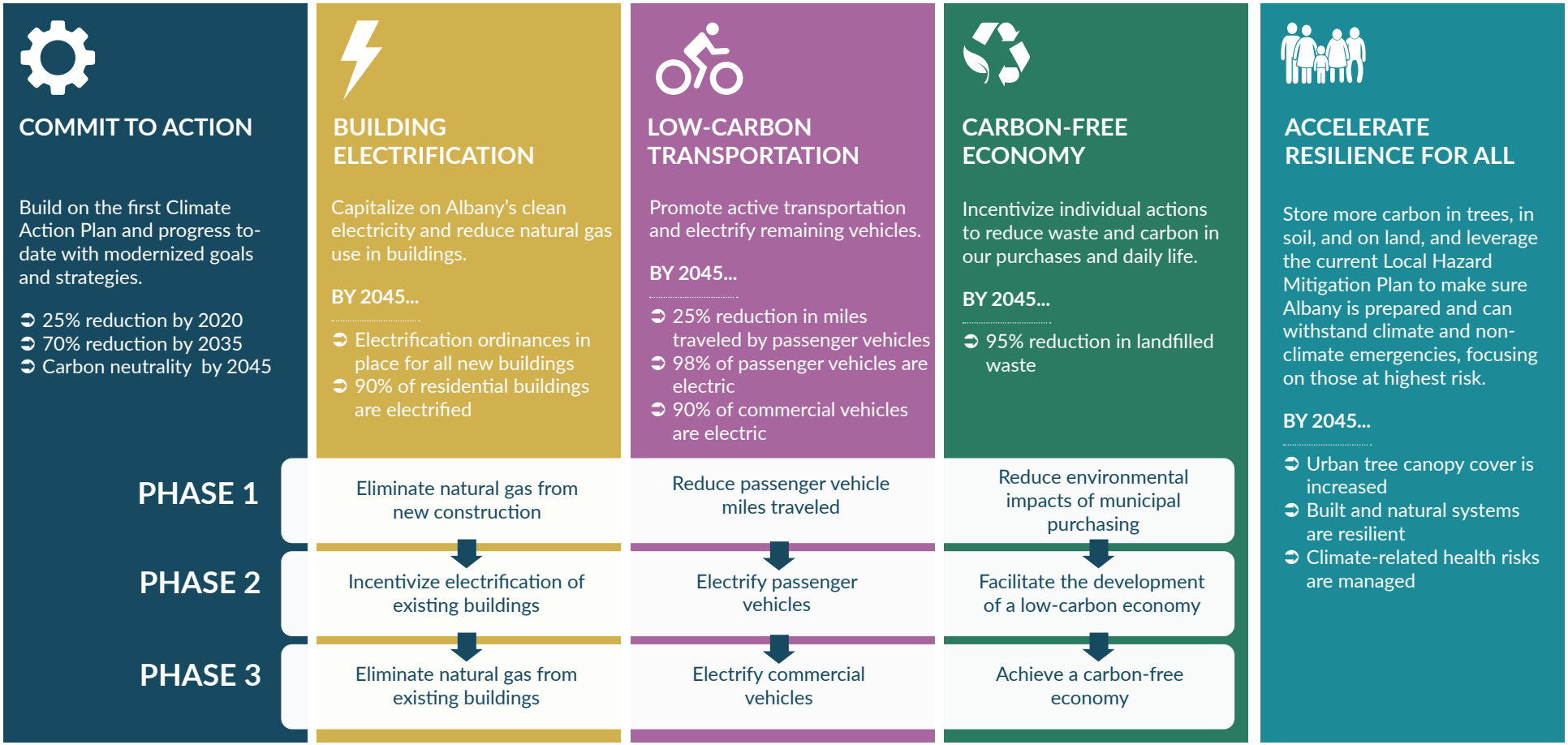
This strategy stores more carbon in trees, in soil, and on land, and leverages the current Local Hazard Mitigation Plan to make sure Albany is prepared and can bounce back from climate and non-climate emergencies, focusing on those at highest risk.

A CRITICAL PATHWAY

The City cannot feasibly implement all strategies and actions at once. This Plan lays out a prioritized, strategic, and phased approach to meeting the City's climate goals.

This pathway, depicted below, focuses on addressing the most impactful and timely actions first. For example, early electrification of new building construction will ensure that future buildings will not require costly retrofits.

The pathway also prioritizes actions within the City's sphere of control. It focuses on leveraging the City's available resources and influence in the near-term to reach interim emissions reduction targets, and then relying on technological advancements and broader state and federal policy will help to fill the gaps later on.



How to Read the Strategies and Actions

Each strategy section (Transportation, Electrification, Economy, Resilience) begins with an Overview describing the strategy, including its importance and relevance to other sectors. The Climate Connection indicates the contribution the strategy will make to reducing Albany's greenhouse gas emissions. Goals are briefly stated, followed by a detailed Actions table (explained below).

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Encourage active transportation through infrastructure and parking management.				
1.1.1	**Develop a new Active Transportation Plan (ATP).** Analyze gaps in the active transportation network and develop a new ATP that serves as the basis for prioritizing active transportation projects for all ages and abilities in the City. The Plan should emphasize multimodal transportation, access to transit, pedestrian safety, bike racks and lockers, beautification, green infrastructure, and a seamless regional bike network that favors low stress bike lanes where feasible. The Plan will ensure that transportation infrastructure is safe and accessible for all ages and abilities.			Near-term

ACTION

The **policies, programs, ordinances, or other general steps** that will be taken to meet the goal.

INVESTMENT

Household or business investment icons indicate that the action may require investments to be made by community members and/or local businesses.

HIGH	MODERATE	LOW
> $15K	$1K-$15K	< $1K

Public investment icons indicate that the action may require investments to be made by the City of Albany and/or other state and regional agencies.

HIGH	MODERATE	LOW
> $250K	$25K-$250K	< $25K

BENEFITS

GHG Emissions Reduction Potential

The **greenhouse gas emissions reduction potential** icon indicates that the action has the potential to directly reduce greenhouse gas emissions.

Public Health

The **public health** icon indicates that the action could enhance public health.

Resilience

The **resilience** icon indicates that the action builds community resilience to climate change impacts.

Feasibility

The **feasibility** icon indicates that the action is highly feasible technically, politically, and socially under current conditions.

Equity

The **equity** icon indicates that the action could enhance equity within the community.

Leadership

The **leadership** icon indicates that the action has high potential for Albany to be innovative and demonstrate its leadership in climate action.

TIMEFRAME

Near-term
= Next 0-3 years (2020-2023)

Mid-term
= Next 4-9 years (2024-2029)

Long-term
= 10 or more years (2030-2045)

1. ADVANCE ACTIVE, SHARED, AND ELECTRIC TRANSPORTATION

Relevant Sectors: Transportation

Transportation is the highest source of greenhouse gas emissions in Albany. The adoption of a 100% carbon-free energy pathway, along with increasing interest in alternative fuel vehicles, walking, biking, and transit, demonstrate that Albany is ready to transition to low-carbon transportation. Increasing active transportation is the priority, as this form of mobility emits the fewest greenhouse gas emissions. Because the current dependency on single-occupancy vehicles is unlikely to change dramatically in the near-term, and purchasing decisions made now will have lasting impacts, this Plan encourages electric passenger vehicle adoption for those who are unable to fully rely on active transit and public transit. Reducing reliance on fossil fuels for transportation also brings economic, public health, and resilience benefits, as consumers are no longer subject to price fluctuations in natural gas and petroleum markets, or air pollution from internal combustion engines.

In order to increase active transportation within the City, this Plan prioritizes the development and implementation of a new Active Transportation Plan to ensure safety and ease of carbon-free, multimodal transportation for all ages and abilities.

This section also includes actions to incentivize the use of carpooling, transit use, and bike- and walk-friendly urban street design. Together, these actions provide lower-carbon options for those who still need to drive, reduce key barriers to taking transit, and create safe, ample opportunities for low-carbon transportation for all ages and abilities. Making it easy to choose a low-carbon option means more community members will try alternative transportation modes and form new, low-carbon transportation habits that improve health and well-being, encourage drop-in business, and reduce local air pollution from fossil fuel-powered vehicles.

The City is already off to a good start. According to data from the Department of Motor Vehicles (DMV), the percentage of battery electric vehicles and plug-in-hybrid vehicles owned and operated by Albany residents in October 2018 was 3.1%. This is 0.6% higher than the Bay Area region-wide average of 2.5%. Further, the number of registered vehicles in Albany declined by 38 vehicles between January 2018 and October 2018, meaning that Albany residents are opting out of vehicle ownership, and using other forms of transportation.

What is Active Transportation?

Active transportation is a form of transporting people (and goods) that utilizes human power, such as walking and biking, as well as running, skateboarding, rollerblading, or using a scooter. Active transportation is free of greenhouse gas emissions and promotes public health through increased exercise.

What is Shared Mobility?

Shared (or pooled) mobility options are modes of transportation that are shared with multiple passengers beyond a single family. Shared transportation includes carpool/vanpooling, transit such as AC Transit and BART, and rideshare such as UberPool and Lyft Line.

Carshare: Vehicles owned by a third-party operator that can be shared among many different users (e.g. Gig Car Share, Zipcar).

Rideshare: Carpooling or ride hailing services (e.g., Uber, Lyft).

CLIMATE CONNECTION

Fossil fuel use from transportation is responsible for over 50% of current community greenhouse gas emissions in Albany.

GOALS & TARGETS

Goal	2045 Target
Decrease passenger vehicle miles traveled (VMT) through use of alternative modes.	➲ 25% reduction in passenger vehicle miles traveled.
Transition passenger vehicles to zero emission alternatives.	➲ 98% of passenger vehicles are electric. ➲ 90% of commercial vehicles are electric.

Goal 1: Decrease passenger vehicle miles traveled (VMT) through use of alternative modes.

	ACTION	INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Encourage active transportation through infrastructure and parking management.				
1.1.1	**Develop a new Active Transportation Plan (ATP).** Analyze gaps in the active transportation network and develop a new ATP that serves as the basis for prioritizing active transportation projects for all ages and abilities in the City. The Plan should emphasize multimodal transportation, access to transit, pedestrian safety, bike racks and lockers, beautification, green infrastructure, and a seamless regional bike network that favors low stress bike lanes where feasible. The Plan will ensure that transportation infrastructure is safe and accessible for all ages and abilities.			Near-term
1.1.2	**Expand and enhance bicycle infrastructure throughout the City.** Prioritize low stress facilities to encourage increased ridership.			Mid-term
1.1.3	**Research feasibility and emissions reduction impact of implementing a parking management strategy.** This research would explore the costs, benefits, and considerations of introducing a parking management strategy such as paid parking or permit systems, while ensuring adequate, accessible parking remains available.			Mid-term
1.1.4	**Encourage use of active transportation through education and incentive programs.** Continue partnership with the Alameda County Safe Routes to School Program and expand relationship with the Albany Unified School District to encourage biking, walking, and rolling to Albany schools and educate students of all ages and abilities on how to safely get to school using active transportation modes. Continue and expand community events such as Bike About Town, Bike-In Movie Night, and Bike to Work Day.			Near-term
Approach: Encourage shared mobility programs.				
1.1.5	**Research and develop a curb management program that prioritizes carbon reduction.** Elements of the program would include 1) establishing designated rideshare and third-party carpooling parking and loading zones, 2) incentivizing carsharing programs, and 3) integrating scooter and bike share docks, bike parking, electric vehicle charging, and green infrastructure.			Near-term
1.1.6	**Work with third party programs to provide shared electric mobility options.** There are a variety of companies that provide shared mobility options such as electric bikes and scooters. The City will work with these companies to encourage the provision of these services to Albany community members and visitors, while considering safety implications and reducing potential safety hazards. The City will work with carshare programs to expand electric vehicle options and promote use of third-party carpooling apps and services, and to address any safety concerns.			Near-term
1.1.7	**Conduct a public transit gap study to increase transit use within the City.** The City will identify opportunities for additional routes to accommodate all ages and abilities. This may include exploring the demand for an electric shuttle to BART stations, commercial corridors, and areas of the City underserved by public transit. Explore potential for bus rapid transit and the need for increasing transit use to-and-from the schools. The City should analyze both the necessity and the feasibility of this measure—including an assessment of potential operating costs—and consider introduction of an autonomous shuttle as technologies develop. This will include exploring options for reducing public transit fares.			Mid-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Encourage density through infill development.				
1.1.8	**Amend the zoning ordinance to require higher density development where appropriate.** These amendments should include increasing building heights, allowing projects to build out to approved densities, and consider opportunities for mixed land use. Increased density can ultimately minimize vehicle miles travelled.			Near-term
1.1.9	**Introduce a residential unit-parking swap program for multi-family property owners in exchange for seismic retrofits.** This program would incentivize seismic retrofits for soft-story multi-family buildings and encourage density by allowing property owners to add additional units to a building beyond current restrictions, in exchange for sacrificing a parking spot. The added revenue would help pay for a seismic retrofit. This exchange would increase density and discourage vehicle ownership and use, which in turn would lower transportation emissions.			Mid-term

Goal 2: Transition passenger vehicles to electric alternatives.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Increase access to electric vehicles and charging infrastructure.				
1.2.1	**Create an Electric Vehicle (EV) Action Plan.** An EV Action Plan would: 1) increase public access to chargers, 2) identify optimal sites for chargers in commercial areas and near the freeway, including DC fast chargers accessible to through traffic, 3) consider integrating chargers into streetlight infrastructure, 4) consider Smart charging technologies that enable a more resilient grid, 5) address barriers to charging for garage-free homes and rental properties, 6) increase use of EVs in carshare programs, and 7) assess the potential to partner with third-party EV charging station providers and EBCE to lower cost and complexity. This action would also include performing outreach to promote widespread adoption of EVs and working to integrate electric commercial vehicles such as buses and garbage trucks, where possible.			Near-term
1.2.2	**Adopt an electric vehicle readiness ordinance that would increase the charging requirements for new construction and renovations.** The City will consider adopting an ordinance exceeding requirements of the 2020 code for installation of electric vehicle conduit and/or chargers for single-family, multi-family, and commercial projects.			Near-term
1.2.3	**Work with gas stations to create the fueling stations of the future.** The City could work with gas stations to identify opportunities for low-carbon fuels such as renewable diesel and ethanol, as well as electric vehicle charging as space allows. Improving accessibility to low-carbon fueling stations could persuade consumers who are worried about refueling limitations to make the switch to zero emission vehicles.			Long-term
1.2.4	**Increase adoption of electric vehicles and motorized equipment.** The City will share and promote available electric vehicle incentives, rebates, and car-swap programs that encourage increased adoption of zero emission vehicles, including continuation of SunShares partnership to provide resources and bulk discounts for the purchase of electric vehicles and chargers. The City will implement municipal fleet procurement policy and encourage switch to electric motorized equipment.			Near-term

2. ELECTRIFY NEW AND EXISTING BUILDINGS

Relevant Sectors: **Residential and Commercial Buildings**

With 100% carbon-free and renewable electricity sources identified and underway through East Bay Community Energy (EBCE)'s services and programs, the City plans to prioritize transitioning Albany residents and businesses from using fossil fuels, to using clean electricity. This includes taking actions that incentivize or require a shift from natural gas infrastructure to all-electric infrastructure in both existing and new buildings, as well as actions that promote energy conservation and efficiency. Prioritizing electrification will address the City's second-highest emissions source, institutionalize a more reliable and resilient, low-cost energy source, and hedge against the volatility of natural gas costs in the coming years.

State efforts to electrify, advancements in technology, and market shifts should bring the cost of all-electric equipment and appliances down over time and make all-electric buildings a more feasible option. It is important to note that the City plans to take a phased approach toward electrification. As a long-term planning document, this Plan aims to set the stage for electrification so that Albany can meet its long-term emissions reduction goals. These measures will be implemented with cost, feasibility, and timing considerations.

Why Electrify?

- Reduce greenhouse gas emissions
- Improve indoor air quality
- Fire safety
- Lower construction costs
- Earthquake safety
- Lower maintenance costs
- Reduced hazard potential

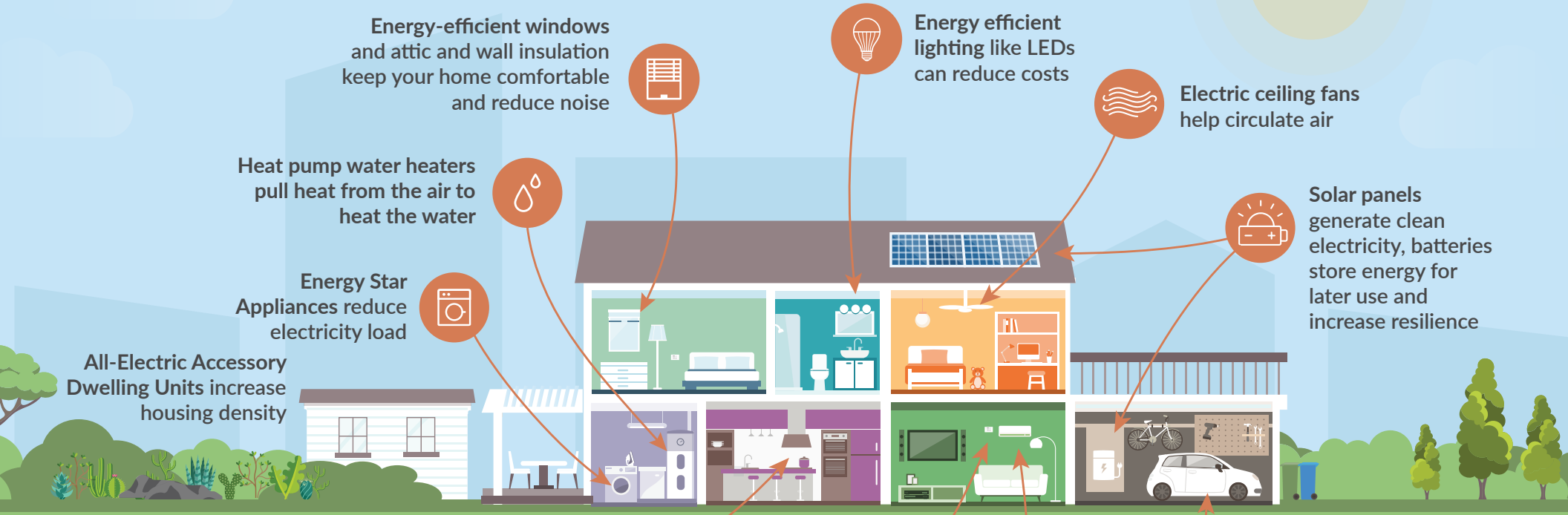
CLIMATE CONNECTION

Natural gas consumption in buildings contributes approximately 40% of current community greenhouse gas emissions.

GOALS & TARGETS

Goal	2045 Target
Eliminate natural gas from new construction.	➲ 98% electrification of existing residential buildings ➲ 95% electrification of existing commercial buildings
Eliminate natural gas in existing buildings.	➲ All new commercial buildings are electric ➲ All new residential buildings are electric

ELECTRIFICATION AT HOME



Energy-efficient windows and attic and wall insulation keep your home comfortable and reduce noise

Energy efficient lighting like LEDs can reduce costs

Electric ceiling fans help circulate air

Heat pump water heaters pull heat from the air to heat the water

Solar panels generate clean electricity, batteries store energy for later use and increase resilience

Energy Star Appliances reduce electricity load

All-Electric Accessory Dwelling Units increase housing density

Induction stoves are safer, healthier to use, and keep kitchens cool

Smart home appliances (like thermostats and lighting controls) increase efficiency and reduce costs

Heat pump HVAC systems replace both gas furnaces and air conditioners

Electric vehicles run off clean energy resources from EBCE or electricity generated at home!

Goal 1: Eliminate natural gas from new construction.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Mandate all-electric construction.				
2.1.1	**Adopt regulations to require all-electric buildings for new construction.** Options such as building code updates or ordinances should be explored as tools for transitioning new construction to all-electric. Ultimately, as the relative cost of conversion from gas to electric comes down, these regulations would cover both new construction and major renovations of existing buildings, including accessory dwelling units.			Near-term

Goal 2: Eliminate natural gas in existing buildings.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Electrify City facilities.				
2.2.1	**Work with regional energy partnerships to develop and implement an Electrification Action Plan for City facilities.** This will include new and existing buildings, incorporate strategies to address energy storage, focus on highlighting any hurdles or solutions that would be applicable to the broader community, and leverage existing rebates.			Near-term
Approach: Educate the community on fuel switching needs, benefits, and methods.				
2.2.2	**Coordinate with regional efforts to conduct outreach and training with local contractors and businesses on electrification.** These outreach efforts would provide tools and knowledge for businesses while also reinforcing the non-energy benefits of electrification such as improved resilience, air quality, and public health and safety.			Near-term
2.2.3	**Connect landlords with contractors, information, and resources for electrification.** Working with landlords and property managers directly to provide information and tools for electrification is an important foundational component of a broader electrification incentive or mandate program.			Near-term
2.2.4	**Work with regional energy partnerships to invest in electrification financing programs such as on-bill financing and metered energy efficiency.** Working with third-party entities allows the City to leverage incentive systems for electrification, such as options for financing projects and paying back loans through power bills.			Near-term
2.2.5	**Connect residents and businesses with funding sources and technical support for private solar installation.** The City will partner with regional entities such as East Bay Community Energy (EBCE) and Bay Area SunShares to increase installation of solar panels for electricity generation and hot water heating on commercial and residential buildings. Increasing solar energy generation capacity of new and existing buildings reduces electricity demand from the grid and makes electrification of appliances and vehicles more cost-effective. Solar installation should be coupled with battery storage.			Near-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Educate the community on fuel switching needs, benefits, and methods. (Continued)				
2.2.6	**Work with EBCE to encourage opt-ups to the Renewable 100 (100% renewable electricity) electricity service.** EBCE's Renewable 100 service supports local renewable energy generation and cleaner electricity generation. Staff will work closely with EBCE to increase residential, commercial, and industrial opt-ups to the Renewable 100 service.			Near-term
Approach: Incentivize electrification of existing buildings.				
2.2.7	**Develop and deploy an outreach and incentive program for electrification.** The City will continue to promote commercial and residential energy efficiency incentive programs while expanding offerings for electrification. The City should work with EBCE or other regional partnerships to create financial incentives and perform education and outreach to electrify new and existing buildings. Rebates could be structured by income level and prioritized for rental units to be used for panel upgrades, building envelope improvements and passive home design features, electric appliances, heat pumps, and renewable energy generation coupled with storage.			Mid-term
2.2.8	**Pursue increase in Utility User Tax for natural gas.** To incentivize the transition to all-electric buildings, a Utility User Tax increase of 2-4% on natural gas would put a price on carbon and generate revenue for matching funds for incentives for electrification projects. This action would require that PG&E allow for differential billing for electricity within their billing systems.			Near-term
2.2.9	**Work with EBCE to continue incentivizing local renewable energy projects.** Through collaboration with EBCE and through implementation of EBCE's Local Development Business Plan, the City could leverage existing incentives to increase renewable energy utilization and generation throughout the entire city. These incentives would include solar installation incentives for residential, commercial, and institutional buildings.			Near-term
2.2.10	**Support and advocate for state and federal efforts to decarbonize buildings and vehicles.** The state of California has exhibited a commitment to decarbonization, including introduction of SB 1477, which calls for all-electric, zero-carbon building programs and updating the state's building and appliance energy efficiency standards. Supporting these efforts, as well as advocating for additional decarbonization efforts at the state and federal level would be a relatively low-effort way to realize cascading benefits for Albany. This may include advocating for a state or federal carbon tax.			Near-term
2.2.11	**Adopt an ordinance requiring individual meters for new multi-family construction.** The City will consider adopting an ordinance exceeding requirements of the 2020 code for installation of meters in multi-family construction projects.			Mid-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Mandate electrification of existing buildings.				
2.2.12	**Partner with EBCE to research the feasibility of requiring electric panel upgrades during major renovations.** Readying electric panels for the transition to all-electric is a crucial foundational step for households, schools, and businesses. For example, when an upgrade is made for solar or electric vehicles, it is sized to consider future electric appliances or infrastructure. Research will need to be conducted to determine the best method for pursuing this goal, including research on legal feasibility and cost.			Near-term
2.2.13	**Identify a pathway for converting existing buildings to all-electric energy.** It is likely that incentives will not be enough to meet the City's goals, and the City will need to transition to mandates to ensure widespread electrification of existing buildings.			Long-term

3. FACILITATE A CARBON-FREE ECONOMY

Relevant Sectors: Solid Waste

Albany is committed to decreasing greenhouse gas emissions, creating a more sustainable community and local economy, and curbing global climate change. To meet this goal, it is important to not only look at the emissions being released within Albany, but also at the embodied carbon of goods consumed by the Albany community. Embodied carbon is all the emissions tied to production, transportation, use, and disposal of a good. The embodied carbon of the goods and services that are consumed by Albany community members and visitors—such as clothing, furniture, meat and dairy, and air travel—represent a considerable source of greenhouse gas emissions, whether or not the goods and services are originally produced in Albany. For example, an appliance purchased in Albany is produced in a factory that emits greenhouse gases during production, is then transported on a fossil-fuel burning truck to the location at which it will be sold, may use energy or produce greenhouse gas emissions during its use, and will require additional greenhouse gas-emitting technology during end of life recycling or disposal. Although the appliance did not originate in Albany, the demand for the product by consumers in Albany led to the production of, transportation of, use of, and disposal of the product. The emissions that go into each stage of the appliance's life are known as the "embodied carbon." Ultimately, if demand for carbon-intensive products decreases, so do the greenhouse gas emissions tied to them.

Decreasing demand for greenhouse gas emissions-intensive goods and services is a vital step to addressing global climate change. While behavior change is challenging, many community members and businesses are already taking positive actions to reduce their individual carbon footprints. Purchasing products made of post-consumer recycled material, shopping locally, eating less meat and dairy and more locally grown fruits and vegetables, and participating in local tool-lending libraries and clothing swaps are all relatively low-effort actions that result in significant emissions reductions.

The City plans to lead by example by updating the municipal Sustainable Purchasing Policy to focus on purchasing items with a smaller carbon footprint, such as low-carbon concrete and post-consumer recycled materials. Ultimately, emissions from consumption must be reduced through consumer behavior change strategies that reduce waste and spur systemic changes toward a local, circular, low-carbon, re-use economy. The City can advance these outcomes through public education, economic development, and building codes. These strategies take advantage of existing programs in the City and regionally, such as those provided by StopWaste, and recognize the crucial role of education, outreach, and community sharing in achieving collective behavior change.

CLIMATE CONNECTION

- Waste collection and processing contributes to current greenhouse gas emissions.
- Although not formally in the City's greenhouse gas inventory, the purchases of goods and services by community members also represent a significantamount of greenhouse gas emissions.

GOALS & TARGETS

Goal	2045 Target
Decrease environmental impacts of municipal purchasing.	Implementation of updated Sustainable Procurement Policy
Promote the development of a low-carbon economy.	95% reduction in landfilled waste

Goal 1: Decrease environmental impacts of municipal purchasing.

	ACTION	INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Update and implement Sustainable Procurement Policy.				
3.1.1	**Update, simplify, and implement the municipal Sustainable Procurement Policy.** An updated Sustainable Procurement Policy would prioritize improvements for the highest emissions reduction impact purchasing decisions within each department, including vehicle and fuel purchases and low-carbon concrete.			Near-term

Goal 2: Promote the development of a low-carbon economy.

	ACTION	INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Mandate and encourage waste reduction.				
3.2.1	**Partner with StopWaste to develop and adopt an ordinance requiring reusables for dine-in restaurants and sustainable take-out foodware.** This policy would reduce a significant source of single-use plastics and other high-carbon materials used in Albany. Adoption is planned for 2020 following completion of the draft ordinance and associated Environmental Impact Report.			Near-term
3.2.2	**Work regionally to support and facilitate food donation programs.** Food donation programs reduce the amount of healthy, safe food that goes to waste and redirects it to those in need.			Near-term
3.2.3	**Promote food waste reduction and low-carbon food choices.** Partner with StopWaste to launch an outreach campaign that educates the Albany community about eating lower down on the food chain and provides information on lower impact, nutritionally equivalent foods, reducing food waste, and composting food scraps. The City will work with local schools and other institutions to encourage low-carbon food choices.			Near-term
3.2.4	**When negotiating a new franchise agreement for solid waste and recycling, include innovative strategies to incentivize waste reduction that could impact upstream consumer habits.** Franchise requirements could include in-County sorting facilities, alternative fuel trucks, increased educational programs, pay-as-you-throw or every-other-week collection, and other innovative strategies that reduce overall waste, recycling, and compost volume and influence upstream consumer behavior.			Near-term
Approach: Reduce emissions embodied in goods and materials.				
3.2.5	**Partner with regional entities to encourage carbon-smart building materials.** This includes educating architects, designers, and contractors. This action would enable and promote carbon-sequestering building materials in new construction and renovations. Ultimately, this action could lead to requirements for the disclosure and/or limit the embodied carbon emissions of buildings through whole-building or material-specific policies.			Near-term
3.2.6	**Adopt voluntary green building tiers.** Adopting CALGreen voluntary tiers can promote efficient and sustainable development.			Near-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Reduce emissions embodied in goods and materials. (Continued)				
3.2.7	**Establish a Farmers' Market.** Local, seasonal produce and locally crafted goods avoid additional greenhouse gas emissions associated with packaging and transport. They also support local small businesses, keeping revenue in Albany.			Near-term
3.2.8	**Promote and facilitate utilization of the sharing and repair/reuse economy through events and outreach.** The City will expand current sharing economy programming such as fix-it clinics, swap events, the Albany Tool Pool, and "Shop Local" campaigns. Increased offerings and awareness of available options such as tool-lending libraries, carshare, swap events, and service websites support the growth of a local reuse economy and discourage consumption of high-carbon materials. It is important to ensure that the sharing economy is equitable and avoids exploitative business models.			Near-term
3.2.9	**Partner with Albany Unified School District to implement low-carbon solutions.** This may include working with the schools on energy efficiency and electrification, waste reduction and recycling, and sustainable purchasing.			Near-term

4. ACCELERATE RESILIENCE

Relevant Sectors: Human and Natural Systems

The emissions reductions from City efforts to electrify buildings, transition to a fossil fuel-free transportation system, and promote low-carbon consumption habits might not be enough to create a truly carbon-free Albany. Carbon must be stored in soil, landscapes, buildings, and infrastructure to offset the emissions that we are not yet able to cap. It is also important to ensure that all are prepared for, and able to withstand, the inevitable impacts of climate change.

This section prioritizes approaches for expanding and improving natural systems throughout the City to promote resilience and carbon storage, such as through climate-adaptive landscape management, compost, and mulching. Incentives, mandates, and outreach and education are necessary to ensure green infrastructure improvements for new and existing buildings. These actions will reduce the urban heat island effect, and store water and carbon. To prepare for more extreme weather and other climate impacts, the City plans to implement strategies for coastal resilience, restore streams so they can hold more water, implement vegetation and fuel management in wildfire-prone areas, increase the capacity of community cooling centers, and further strengthen emergency management capabilities. This multi-pronged approach to climate adaptation will ensure Albany is more prepared and resilient.

CLIMATE CONNECTION

- Natural lands and systems, including trees and soil, have the potential to store and sequester carbon.
- In many cases, extreme events will be made worse by climate change. The most vulnerable populations are also most susceptible to extreme events and climate change.

GOALS & TARGETS

Goal	2045 Target
Increase urban tree canopy cover.	Maximize urban tree canopy cover
Increase resilience of built systems and infrastructure.	Maximize installations of green infrastructure
Increase resilience of natural lands and systems	Install needed coastal flooding improvements
Address climate-related health risks	100% of population with access to emergency buildings

Goal 1: Increase urban tree canopy cover and landscaped area.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Increase urban tree canopy and landscaped area.				
4.1.1	**Create and implement a comprehensive Urban Forestry Plan.** An Urban Forestry Plan would focus on increasing urban canopy cover and include elements such as 1) conducting an inventory of street trees and urban canopy cover, 2) determining canopy goals and targets, 3) developing a planting guide that prioritizes increasing available soil, carbon sequestration, resilience, and other equitably-distributed co-benefits, 4) create incentives and/or requirements for street tree planting, and 5) devising a plan for retiring trees and addressing unintended consequences such as sidewalk uplifts. The plan should also address supporting trees on private property and consider creative ways to maximize use of public property to increase trees and green infrastructure.			Near-term
4.1.2	**Explore creative possibilities for increasing green infrastructure in Albany.** The City will consider innovative opportunities for plantings such as parklets, green roofs on bus stops, and vertical wall gardens.			Near-term

Goal 2: Increase resilience of built systems and infrastructure.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Increase the resilience of public projects and facilities.				
4.2.1	**Prioritize adaptation and resilience in discretionary Capital Improvement Program (CIP) projects.** This action would include ensuring that the infrastructure being developed will be designed with forecasted changes in climate (precipitation, temperature, wildfire, sea level rise) in mind.			Near-term
4.2.2	**Work with EBCE to assess and improve energy resilience at critical facilities.** On-site solar PV and energy storage systems at appropriate scales would support the continued operation of critical services during a power outage. The City will work with EBCE to determine a funding strategy to prioritize and finance projects.			Mid-term
Approach: Increase the resilience of private buildings.				
4.2.3	**Prepare a comprehensive soft-story retrofit ordinance and consider the possibility of incentives.** To retain the carbon embodied in existing buildings, the City will ensure that private buildings are resilient in the event of an earthquake by creating a soft-story retrofit ordinance and providing incentives for compliance. The City will continue to provide fee waivers for earthquake retrofit projects on single-family homes.			Near-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Address issues with the electric grid.				
4.2.4	**Address time-of-use issues by increasing storage capacity and energy efficiency.** The City will support local energy storage projects to improve microgrid resilience and help ensure power is available when it is needed. The City will help property owners address hurdles to implementation of renewable energy generation systems and energy storage infrastructure, including permit streamlining if determined to be a significant constraint. This work would include regional collaboration to develop incentive programs. This measure is strengthened by implementation of energy efficiency measures identified in the Electrification Section of this Plan.			Near-term
4.2.5	**Advocate for grid 2.0 initiatives.** The current grid is not designed to support a 100% renewable energy supply, so advocacy is needed on the State level to accelerate grid 2.0 initiatives.			Near-term
Approach: Expand green infrastructure improvements.				
4.2.6	**Promote climate adaptive landscaping.** The City will promote increasing soil carbon, and planting high carbon sequestering, climate appropriate species in landscaping projects. Options for promoting climate-friendly plant species include 1) educating the public and professional landscapers and 2) working regionally with partners such as ReScape California and StopWaste to develop and promote a planting guide. A planting guide could include information on native and climate-adaptive plants, how to properly apply compost and mulch, reducing synthetic fertilizers to support soil health, how to store more water in the ground, and how to store carbon in soil, plants, and trees.			Near-term
4.2.7	**Support climate resilience and green infrastructure modifications to private property.** The City will encourage adaptation upgrades such as cool roofs and green roofs, and cool pavement and pervious surfaces. This should also include encouraging installation of low-emissions space cooling devices such as ceiling fans and heat pumps, which increase resilience cost-effectively and with a lower environmental impact.			Near-term
4.2.8	**Work with FEMA and the City of Berkeley to update flood zone maps.** The City will update watershed management plans with current understanding of climate change related weather patterns to identify properties vulnerable to flooding, and help prepare property owners to implement adaptation actions.			Mid-term

Goal 3: Increase resilience of natural lands and systems.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Manage, restore, and partner to foster resilient natural landscapes.				
4.3.1	**Continue to restore and maintain creeks to accommodate increased rain events.** Creek restoration can reduce the likelihood and magnitude of flooding and support healthy habitat.			Near-term

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Manage, restore, and partner to foster resilient natural landscapes.				
4.3.2	**Continue to manage wildfire risk by implementing vegetation management and fuel reduction programs.** These programs would focus on the highest hazard areas, including Albany Hill and areas adjacent to homes and recreation areas. These programs would defer to the Albany Hill Master Plan and recent Public Works fuel load assessment for fire mitigation efforts on the Hill and consider goals that also help maximize wildlife habitat. The City will ensure that vegetation management incorporates habitat management principles.			Near-term
4.3.3	**Partner regionally to address coastal flooding impacts to the Albany waterfront and freeway entrance.** The City should partner with an appropriate entity such as the Bay Conservation and Development Commission to address sea level rise through living shoreline principles to address coastal flooding, where appropriate.			Mid-term
4.3.4	**Partner regionally to promote water conservation.** This includes working with EBMUD and ReScape California to promote and incentivize water conservation measures such as low-flow technology and graywater systems. The City will advocate for EBMUD Purple Pipe connection.			Near-term

Goal 4: Address climate-related health risks.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Provide services during extreme events.				
4.4.1	**Inventory, identify, and maintain adequate cooling centers for extreme heat.** Accessible cooling centers must be made available during extreme heat events.			Near-term
4.4.2	**Promote regional services during extreme weather events.** The City will coordinate with local public health agencies to ensure that information about how to prepare for extreme events, such as wildfire smoke or smog, is available to the community prior to and during extreme events.			Near-term
4.4.3	**Strengthen emergency management capacity to prepare for and respond to the impacts of climate change.** The City should prioritize capacity improvements such as training and equipment to address risks exacerbated by climate change. Emergency management should be equipped to address the possibility of multiple emergencies at the same time, such as the combination of wildfire smoke coupled with extreme heat and local brush fires. Community outreach on preparedness could include information on building envelope improvements for efficiency and air quality.			Near-term

Goal 5: Secure funding for climate resilience projects.

ACTION		INVESTMENTS	BENEFITS	TIMEFRAME
Approach: Pursue unique funding opportunities.				
4.5.1	**Research the feasibility of a local carbon offset program.** The City will research the feasibility and impact of a local carbon offset program that would allow community members to contribute funds to support local climate action and resilience.			Mid-term

PLAN IMPLEMENTATION

This Plan aims to both stave off climate impacts and prepare for inevitable changes. The Plan focuses on three of the most challenging sectors to reduce greenhouse gas emissions in order to achieve carbon neutrality: buildings, transportation, and individual purchases of goods and services. The Plan also combines climate change mitigation with crucial actions to store carbon and prepare to adapt successfully to a changing climate.

The City of Albany will lead implementation of the Climate Action and Adaptation Plan. Staff will track progress in a separate Implementation Plan, which includes deliverables, a detailed approach, a responsible entity and key partners to lead them, a timeframe for implementation, and potential funding sources. Success will be measured by the implementation status of each action, and using key performance indicators. Effective implementation will require individuals and businesses to take meaningful steps to eliminate carbon from buildings, vehicles, and lifestyles.

Everyone Has a Role in Implementation

Implementation of the strategies and actions in this section will require the entire Albany community and regional partners to engage actively in carbon reduction strategies. Here are some examples of simple steps Albany community members and businesses can take to reduce their climate impact.

-5,000 lbs $MTCO_2e$

work + play locally

layer up!

-1,000 lbs $MTCO_2e$

-80 lbs $MTCO_2e$

reduce your drive time

explore non-meat cuisine

-300 lbs $MTCO_2e$

Minimize International Flights

A round-trip flight to Europe causes carbon emissions of over 5,000 pounds per person.

Turn Down Your Heater

In a typical Albany home, turning down the gas furnace by one degree reduces carbon emissions by over 1,000 pounds over the course of a typical winter.

Cut Down on Driving

For a typical car, driving just 100 miles less cuts carbon emissions by almost 80 pounds.

Reduce Your Meat & Dairy Consumption

Cutting meat and dairy by 20% can reduce your diet-related carbon emissions by almost 300 pounds per year.

Sources: Shameplane.com; U.S. EPA ENERGY STAR Calculator; U.S. EPA; Scarborough, P., Appleby, P.N., Mizdrak, A. et al. Climate Change (2014) 125: 179. https://doi.org/10.1007/s10584-014-1169-1

APPENDIX A. WHAT YOU CAN DO

Addressing climate change is going to take more than just action from the City of Albany itself. Individuals and community groups all have a critical role to play in achieving the City's climate action goals. Through collective, committed, and considerate actions from all, Albany can be a healthier, more resilient, more equitable, and more sustainable City to live in and visit for both present and future generations.

You can make a big difference by reducing your environmental impact in the following areas: air travel, food, and household energy use. By taking action, you can help Albany become a livable, equitable, resilient, and engaged carbon-neutral community.

Low-Carbon Transportation

- [ ] Avoid single passenger car trips. Take transit, carpool, walk, and/or bike instead.
- [ ] Use a bike for short-distance commutes, rather than a car.
- [ ] Delay your next purchase of a new or used vehicle to maximize use. When you decide to make a purchase, invest in an all-electric vehicle.
- [ ] Consider non-stop flights, and purchase carbon credits when you must fly.

Building Electrification

- [ ] Install energy-saving appliances and fixtures, such as Energy Star Appliances and LED lightbulbs.
- [ ] Reduce your natural gas use. Install electric heat pumps for space and water heating, electric dryers, electric stoves, etc. to transition away from fossil fuels.
- [ ] Choose EBCE's Renewable 100 service for your electricity source, to power your home with 100% renewable electricity and support local clean energy generation. Opt-up by calling 1-833-699-EBCE or visiting ebce.org/opt-up.
- [ ] Install low-flow showerheads and aerated faucets to reduce the amount of hot water you use.

Carbon-Free Economy

- [ ] Reduce your meat and dairy consumption.
- [ ] Eat more low-carbon foods like non-processed foods, seasonal fruits and vegetables, and grains.
- [ ] Avoid unnecessary food waste: plan meals, right-size your grocery and restaurant purchases, and bring reusable containers for your leftovers when eating out.
- [ ] Use Albany's tool lending library instead of buying new (www.albanyca.org/services/tool-pool).
- [ ] Fix things that are broken instead of buying new.
- [ ] Second-hand shop to replace items and join community sharing websites like Nextdoor.
- [ ] Shop locally and support local businesses.
- [ ] Reduce or eliminate use of single-use plastics. Carry your own reusable utensils and straws. Request less packaging when ordering take-out and bundling online delivery packages.
- [ ] When considering financial investments, look for companies and products that have a positive, rather than a negative, impact on the environment.

Accelerate Resilience

- [ ] Utilize Carbon-Free Albany (www.carbonfreealbany.org) to see your household's carbon footprint and access resources that can help you access funding and information to reduce your household's impact on the environment.
- [ ] Voice support for policies that promote equitable greenhouse gas emissions reductions.
- [ ] Plant a tree in your yard, and/or request a street tree in front of your house.
- [ ] Develop a plan with your household to prepare for extreme events, including creating a disaster preparedness kit.
- [ ] Talk about climate change and the changes you're making with your friends and family. People are more often influenced by friends than by experts.

Get Informed and Involved

- [ ] Join local community groups that are involved in mitigation and adaptation efforts.
- [ ] Sign up for Carbon-Free Albany (www.carbonfreealbany.org)
- [ ] Volunteer at local beach and park cleanups.

APPENDIX B. PARTNERS AND ROLES

The City of Albany cannot achieve the ambitious goals described within this CAAP without diverse partnerships with individuals and organizations near and far. The table below describes the various partnerships that the City participates in and the roles of partners in the CAAP planning and implementation process.

COMMUNITY	Engage with City programs, follow applicable policies, and take actions to reduce emissions. ➲ **Community Members** ➲ **Businesses** ➲ **Institutions** (UC Village: UC Berkeley student housing; Albany Unified School District)
UTILITIES	➲ **Solid Waste & Recycling:** Current service provided by private hauler Waste Management of Alameda County. ➲ **Electricity:** Current transmission service and billing provided by Pacific Gas & Electric (PG&E). Electricity procured by East Bay Community Energy (EBCE). ➲ **Natural Gas:** Current service provided by Pacific Gas & Electric (PG&E). ➲ **Water:** Service provided by the East Bay Municipal Utility District (EBMUD), a public agency provided water and sewage treatment services for communities in Alameda and Contra Costa Counties.
COUNTY	➲ **Alameda County Office of Sustainability:** Provides resources and opportunities for idea sharing regarding sustainability initiatives to local jurisdictions. ➲ **Alameda County Office of Emergency Services:** County agency providing resources and support for emergency response and preparedness activities. ➲ **Alameda County Transportation Commission:** County agency responsible for coordinating countywide transportation planning efforts and administering local, regional, state and federal funding for transportation projects. ➲ **East Bay Community Energy (EBCE):** Local public agency tasked with supplying clean electricity at low rates to customers in Alameda County. EBCE procures electricity and provides local renewable resources, while PG&E continues to administer natural gas service as well as energy transmission, distribution, repair, customer service, and billing for EBCE customers. Their default electricity option in Albany is carbon-free. EBCE also implements a Local Development Business Plan to accelerate the development of clean energy assets in Alameda County, enable electrification of buildings and transportation, and increase resilience through increased energy storage. ➲ **StopWaste (Alameda County Waste Management Authority and Energy Council):** County agency administering policies and programs related to waste, water, and energy reduction. Provides support and coordination for the development of Countywide initiatives, including climate action planning and implementation.
REGIONAL	➲ **East Bay Regional Park District:** Agency managing large system of public parklands in in Alameda and Contra Costa counties, including portions of the Albany waterfront vulnerable to sea level rise. ➲ **San Francisco Bay Conservation and Development Commission (BCDC):** Regulates development along the San Francisco Bay, including Albany's waterfront. ➲ **Association of Bay Area Governments (ABAG):** Regional planning agency that provides assistance to local governments, including a focus on sustainability, climate adaptation, resilience, and equity issues. ➲ **Metropolitan Transportation Commission (MTC):** Transportation planning, financing, and coordinating agency for the nine county Bay Area. ➲ **Bay Area Regional Energy Network (BayREN):** Collaboration of the nine Bay Area counties providing regional-scale energy efficiency programs, services, and resources. Managed by ABAG and funded by utility ratepayer funds through the CPUC. ➲ **Bay Area Air Quality Management District:** Regulates aire pollution in the nine county Bay Area and provides policies and programs to reduce emissions. ➲ **Bay Area Climate Adaptation Network (BayCAN):** Collaborative network of local government staff promoting sharing and problem solving focused on adaptation challenges in water supply, sea level rise, wastewater and stormwater management, fire risk, ecosystem and parks, and public health.

STATE OF CALIFORNIA	➲ **California State Legislature:** Elected body that sets State policy ➲ **California Public Utilities Commission (CPUC):** Regulates public utilities providing electric power, natural gas, telecommunications, and water. ➲ **California Energy Commission (CEC):** State energy policy and planning agency responsible for forecasting future energy needs, promoting energy efficiency through appliance and building standards, supporting renewable energy technologies, and maintaining the California Energy Code. ➲ **CalEPA:** State agency focused on public health, environmental quality and economic vitality. ➲ **CalRecycle:** CalEPA branch that oversees the state's waste management, recycling, and waste reduction programs. ➲ **Building Standards Commission (CBSC):** State agency responsible for managing the development, adoption, approval, publication, and implementation of California's building codes. ➲ **California State Parks:** Agency managing the California state parks system, and property owner of portions of the City's waterfront which are subject to sea level rise. ➲ **California Coastal Commission:** State agency regulating land use and public access to the coastal zone, including the Albany waterfront. ➲ **Cal-OES:** State agency responsible for overseeing and coordinating emergency preparedness, response, recovery and homeland security activities, and overseeing the City's Local Hazard Mitigation Plan. ➲ **CAL FIRE:** Agency responsible for fire protection, forestry, and fire emergency services. ➲ **Caltrans:** State agency responsible for managing the state highway system, including I-80, I-580, and San Pablo Avenue in Albany.
FEDERAL	➲ **Environmental Protection Agency (EPA):** Administration of Federal environmental policies and programs ➲ **Federal Emergency Management Agency (FEMA):** US Homeland Security agency responsible for coordinating the response to major disasters, including support for hazard mitigation and disaster preparedness programs.
NGOs	➲ **Climate Mayor's Network:** Bipartisan peer-to-peer network of U.S. mayors working together to demonstrate leadership on climate change through meaningful action in their communities and to express and build political will for effective federal and global policy action. ➲ **International Council for Local Environmental Initiatives (ICLEI):** Global network of cities, towns and regions committed to building a sustainable future, providing support for climate action planning and implementation. ➲ **Intergovernmental Panel on Climate Change (IPCC):** Organization synthesizing and communicating the work of climate scientists.