



**CITY OF ALBANY**

# **CLIMATE ACTION AND ADAPTATION PLAN**

JUNE 2019 | DRAFT FOR PUBLIC REVIEW

*Please note that this is a working draft. This version of the City of Albany Climate Action and Adaptation Plan is not fully designed and formatted. Thus, please focus your review on the content, and not the formatting of the document.*

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# Introduction

## Why a Climate Plan?

Climate change is happening in Albany. Throughout the remainder of the 21st century, Albany's climate is projected to grow substantially hotter, and precipitation patterns are expected to be less consistent with more intense rainfall. 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 and public safety consequences from these climate-related risks.

The Paris Agreement, signed by many nations in 2016 as part of the United Nations Framework Convention on Climate Change, committed to limit global temperature rise to 1.5°C. Curbing global temperature rise to 1.5°C will greatly reduce the risk of catastrophic climate change impacts. For example, allowing global temperatures to rise just a half of a degree more—to 2°C—would expose an additional 10 million people to sea level rise, double climate change-induced water stress, and make several hundred million people susceptible to poverty.<sup>1</sup>

The latest report from the Intergovernmental Panel on Climate Change found that limiting global temperature rise to 1.5°C will require major and immediate transformation of the way we live our lives. Behavior and technologies will need to shift, including serious action in the energy, transportation, and consumer sectors. While this transformation will be challenging, it is important to note that ambitious climate action can bring a variety of community benefits, such as more jobs and improved health.

As a small community with engaged residents, prosperous businesses, and strong leadership, Albany has both the ability and the responsibility to address climate change. The City's Sustainability Division strives to protect Albany's natural systems and communities from the effects of climate change, while also ensuring social equity, a resilient community, and a thriving local economy. To be most effective in this goal, the community will need a thoughtful and coordinated approach. This City of Albany Climate Action and Adaptation Plan provides an ambitious and strategic pathway for reducing the community's greenhouse gas emissions and preparing for future climate change impacts - because if Albany doesn't do it, then who will?

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<sup>1</sup> IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V. et. al., World Meteorological Organization, Geneva, Switzerland, 32 pp. [https://www.ipcc.ch/site/assets/uploads/2018/10/SR15\\_SPM\\_version\\_stand\\_alone\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/2018/10/SR15_SPM_version_stand_alone_LR.pdf) (accessed June 5, 2019)].



## **A New Path Forward**

The City has achieved its 2020 greenhouse gas (GHG) reduction targets, and the Climate Action Committee (formerly Sustainability Committee) proposed ambitious long-term goals of 60% GHG reductions by 2035 and net zero emissions by 2050, which are included in the City's General Plan. This new Climate Action and Adaptation Plan addresses these more ambitious long-term reduction targets and incorporates new priorities, trends, and emerging technologies.

## **A Message from the City of Albany**

Albany is a small City with big sustainability goals. The City aims for 60% reductions in greenhouse gas emissions by 2035 and net zero emissions by 2050. In fact, the City has a long history of environmental activism—the City was incorporated in 1908 after a group of women organized to protest garbage from Berkeley being dumped in their community. Today, Albany's engaged and educated community still values health, sustainability, and climate action.

## **We Have a Climate Emergency**

Global climate change poses an existential threat and a global humanitarian climate emergency, and we share the responsibility to mitigate emissions in order to reduce the impact of our changing climate. Rising sea levels and hotter summers threaten the very identity of this small village by the bay. Albany is challenged with the momentous responsibility of reducing greenhouse gas emissions to stabilize the global climate while preparing for the effects of climate change, some of which have already arrived.

## **Our Progress**

Through the Albany City Council's Strategic Vision, we are committed to fostering a healthy and sustainable urban village by advancing action against climate change 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 from climate change and its effects, which is why we are committed to taking bold actions toward climate stability. Through energy and water use improvements, waste reduction efforts, and clean technology innovations, we have already decreased local emissions by 27%—exceeding the city's 2020 emissions reduction goal. Albany's default electricity supply is now carbon-free thanks to actions by staff, the Climate Action Committee, and the City Council, as well as support from the community.

## **A Bold New Plan**

While we are off to a great start, there is still much more that we can do! The City began writing its first Climate Action Plan when climate action planning was at its infancy. The field has developed substantially since then, and we identified the need to develop a new plan to reflect new priorities, trends, and emerging technologies. This plan aims to meet the City's new aggressive reduction targets, requiring a bold new approach focusing on innovative policies that address system transformation and emerging technologies.

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## *If Not Albany, Who?*

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### **If not now, when? If not Albany, who?**

While our community is small and faces a myriad of challenges, we see our size as a strength rather than a weakness. We have the ability, and responsibility, to act quickly to reduce carbon pollution. In fact, we believe we can be a leader in the fight against climate change, and this plan is the first step toward positive change. We want other cities, large and small, to look to us as an example and scale up the innovative actions we choose to pilot.

### **Climate and Community**

This Plan was developed with the goal of prioritizing climate mitigation and adaptation strategies that have a host of additional community benefits, such as public health improvements, environmental conservation, and urban beautification. It is also important to acknowledge that climate action is an investment in our community and our local economy. We cannot ignore the costs of inaction. It is also important to us that our actions to create a more stable climate do not disproportionately affect our vulnerable populations. This is why we took equity into our consideration of each action, and we prioritized actions that will cultivate a more equitable city.

### **It Takes a (Urban) Village**

Every person in Albany has a role in helping the City meet its climate action goals. As a leader in the 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 ultimate goal of getting to zero carbon emissions by 2050. We thank you for choosing to live in Albany, and for your partnership in working to ensure a vibrant and sustainable urban village now and into the future.

## Acknowledgments

### City Council

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Peggy McQuaid, Vice Mayor  
Michael Barns, Council Member  
Peter Maass, Council Member  
Nick Pilch, Council Member

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## Executive Summary

Albany is committed to doing its part to stabilize the global climate. The City is at risk from increased flooding, never-before-seen extreme heat, wildfire and smoke, and landslides caused by more heavy rainfall. This Climate Action and Adaptation Plan (CAAP) builds on the significant achievements the City has already made and sets bold, new targets—a **60% reduction in greenhouse gas emissions by 2035, carbon neutrality by 2050, 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 residents and City staff informed development of this Plan through community surveys, one-on-one interviews with City staff, public workshops, stakeholder focus groups, and ongoing engagement with community groups and City committees and commissions. In particular, the resident-led Climate Action Committee and subcommittees identified, assessed, and formalized the Plan goals and strategies.

### A Comprehensive Plan

The City of Albany has already made great progress: The City has taken bold actions that have reduced community greenhouse gas emissions 27% from 2005 to 2017. But more can be done. This Plan focuses on the most impactful and meaningful opportunities to move the needle on climate impacts and resilience. It prioritizes actions that not only significantly reduce greenhouse gas emissions, but are highly feasible, substantially advance equity, and demonstrate Albany's innovation and leadership in climate action.

#### Our Vision

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

#### Our Goals

- 60% reduction in greenhouse gas emissions by 2035
- Carbon-neutral by 2050
- Smart, equitable resilience investments

#### Our Challenge

- Current estimated emissions: 53,000 MT CO<sub>2e</sub>, largely from transportation and natural gas consumption.
- Climate risks include flooding, extreme heat, and wildfire.

### Our Strategies



#### Electrify our buildings

We'll convert our natural gas infrastructure to locally sourced, renewable electricity. We'll save more energy too.



#### Transition to low-carbon transportation

We'll eliminate fossil fuel use. We'll make it easy and affordable to choose to walk, bike, or take the bus, and to choose all-electric cars when we do need to drive.



#### Make our economy carbon-free

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



#### Accelerate resilience for all

We'll store carbon in our trees, soil, land, and buildings, and make sure all are prepared and can bounce back from climate change's unavoidable impacts.

## Implementation

In the final version of the Plan, an Implementation Plan will be included. Each strategy will come with detailed actions, a responsible entity and key partners to lead them, and a timeframe for implementation. An Implementation Matrix will also be included, with key performance indicators, funding strategies, and other key factors necessary for successful implementation.

The City must lead by example and will be responsible for oversight of this Plan and its implementation. Successful implementation will require engagement by the whole community and a focus on the needs and risks faced by the most vulnerable communities.

## What Does Success Look Like?

The City of Albany aims to demonstrate that sharp and swift carbon 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 seen through the 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.



## Vision

# OUR VISION: ALBANY IN 2050



### 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

- **Every resident 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** that employ and serve under-represented, under-served communities are the norm. The economic benefits of sustainability are shared across the community.
- **Equity drives our sustainability.** Initiatives are developed in collaboration with communities of color, low-income populations, and other vulnerable groups.



### RESILIENT

- **People and living systems are resilient to the local effects of climate change.** They have the resources and support to bounce back from 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.

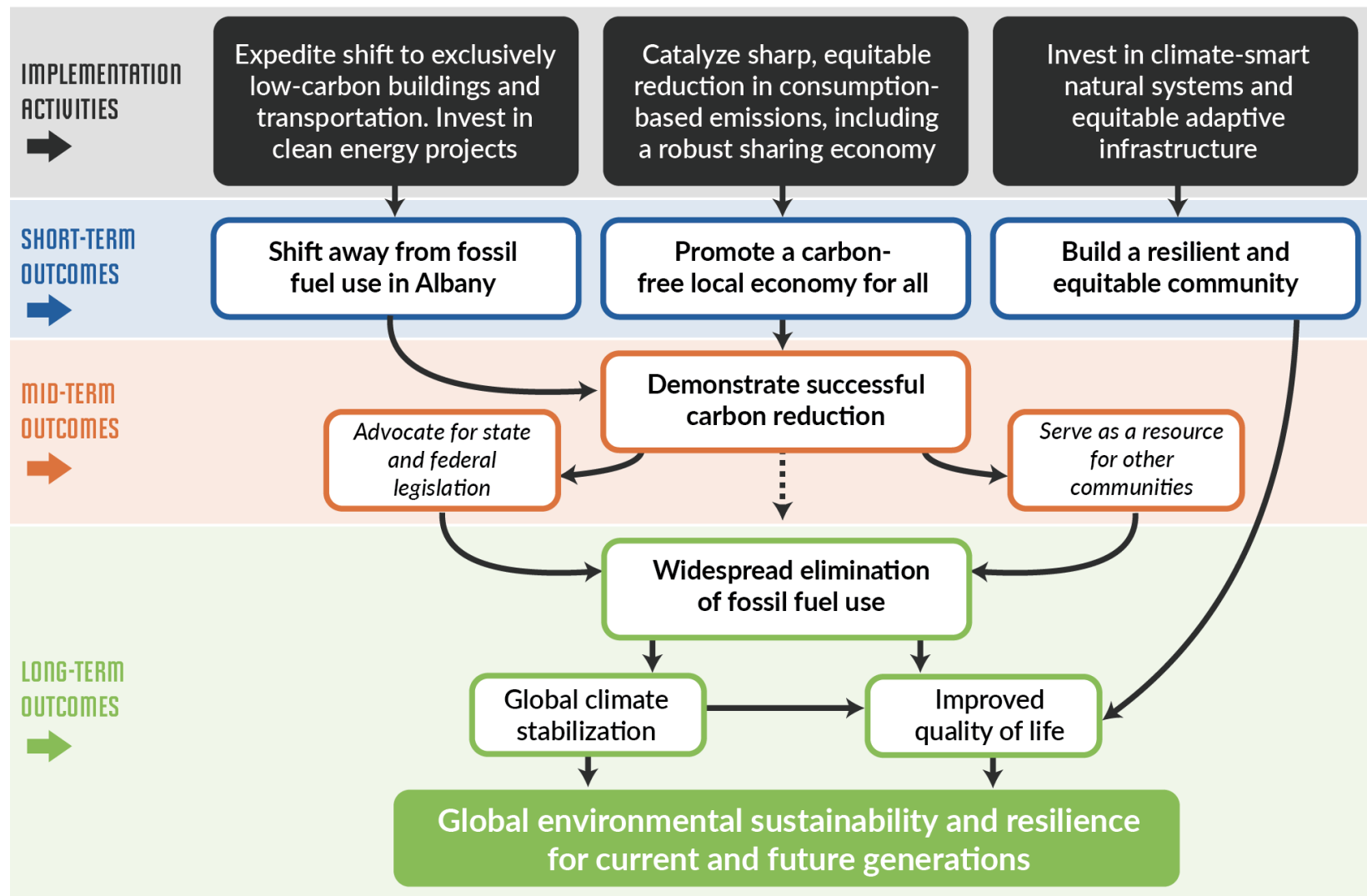


### ENGAGED

- **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 2050: HOW WE'LL GET THERE

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



# Why act?

## Climate Change and 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 with those changes, will bring new understanding of how impacts are interacting and may interact in the future. To stay ahead of this curve, this document takes a systems approach that recognizes the inherent connections and interdependence of climate, ecology, and people.

## Risk and Vulnerability

Albany faces a number of risks posed by current and anticipated future climate change. The City of Albany's Draft Adaptation Plan and recent Local Hazard Mitigation Plan both describe key climate hazards.

### Flooding

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.<sup>2</sup> These events may become more likely to occur during this century.

Sea level rise can also increase coastal flooding. Albany's older stormwater drainage system may not have the capacity to handle future volumes: 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 and public health services located outside the city such as wastewater treatment. By 2100, there is a 2% chance of annual flooding equivalent to 72 inches of sea level rise, compared to today's levels.

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<sup>2</sup> Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.

## 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 (see Figure 1).<sup>3</sup> Currently, Albany rarely experiences days over 90°F. Under these conditions, Albany would be more like the hotter and significantly drier conditions in Palos Verdes Estates, on the coast near Los Angeles.<sup>4</sup>

## Landslides

Given Albany's topography and geology, rain-induced landslides are relatively unlikely even with a projected increase in risk factors for landslide. While most emergency assets and other key resources are located outside of landslide-prone areas, some assets east of Albany Hill and San Pablo Avenue are in areas that could be affected by future landslides that result from more intense rainfall.<sup>5</sup>

## Wildfires

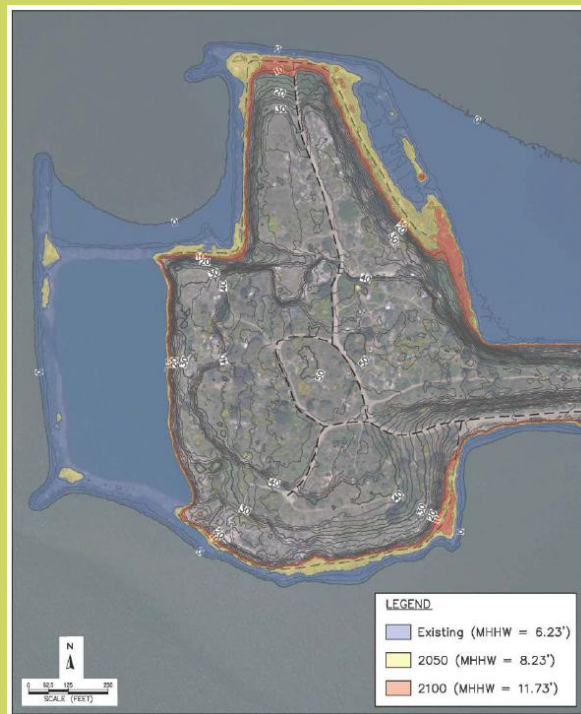
Increasing drought and temperature are projected to increase the area burned by wildfire by 77% throughout California under a high emissions scenario.<sup>6</sup> However, it is unclear how Albany may be affected. While there are no emergency assets in

### Spotlight: Neck & Bulb Flooding & Sea Level Rise

Sea level rise and more intense coastal storms could increase flooding and wind- and wave-driven erosion. These impacts could lead to temporary or permanent inundation of land, or physical loss of land including parts of the landfill, coastal habitat (rocky shorelines, lagoons, mudflats, sand beaches), and existing trail, bird watching, and other public recreation areas.

*Inundated areas of the Albany Bulb today (blue); additional inundation expected by 2050 and by 2100 also shown.*

*MHHW: mean higher high water. Source: Albany Neck & Bulb Transition Study. (2015). Figure 2.5.*



<sup>3</sup> Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.

<sup>4</sup> 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).

<sup>5</sup> Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.

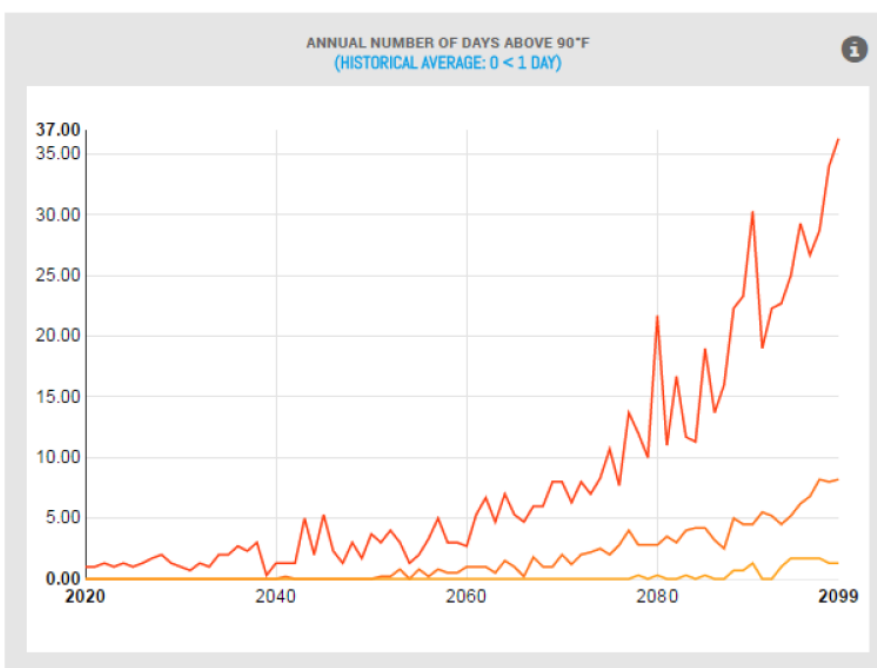
<sup>6</sup> Westerling, Anthony Leroy. (University of California, Merced). 2018. Wildfire simulations for California's fourth climate change assessment: Projecting changes in extreme wildfire events with a warming climate. California's Fourth Climate Change Assessment, California Energy Commission. Publication Number: CCA4-CEC-2018-014. [http://www.climateassessment.ca.gov/techreports/docs/20180827-Projections\\_CCA4-CEC-2018-014.pdf](http://www.climateassessment.ca.gov/techreports/docs/20180827-Projections_CCA4-CEC-2018-014.pdf) (accessed June 3, 2019).



wildfire risk zones and the overall area burned in and near Albany may decline, Sutter East Bay Medical Care and the 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).<sup>7,8</sup> Additionally, both Golden Gate Fields and the freeway north of Buchanan Street are close to the park entrance.<sup>9</sup>

Additionally, 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.

**FIGURE 1. PROJECTED EXTREME HEAT DAYS IN ALBANY.**



*Notes: RCP 8.5 projected annual number of days above 90 °F throughout the 21<sup>st</sup> century. Lines represent low-end (light orange), mid-range (dark orange) and high-end (red) model results. Source: Four Twenty Seven as represented on Vizonomy.*

<sup>7</sup> CalAdapt’s wildfire projection tool indicates the annual average of area burned may decline for Albany in the 21<sup>st</sup> 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://caladapt.org/tools/wildfire/#climatevar=fire&scenario=rcp85&population=bau\\_mu&lat=37.90625&lng=-122.28125&boundary=locagrid&units=ha](https://caladapt.org/tools/wildfire/#climatevar=fire&scenario=rcp85&population=bau_mu&lat=37.90625&lng=-122.28125&boundary=locagrid&units=ha) (accessed June 3, 2019).

<sup>8</sup> 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.

<sup>9</sup> Four Twenty Seven Climate Solutions. (2017). Albany Climate Change Chapter: Draft Adaptation Plan. 85 pp.



**TABLE 1. CLIMATE HAZARD RISK SUMMARY FOR ALBANY IN 2100 (SOURCE: FOUR TWENTY SEVEN CLIMATE SOLUTIONS).**

Climate Hazard	Exposure <sup>1</sup>	Summary
Inland Flooding	Medium	Significant <sup>2</sup> exposure during 100-year (1 percent annual chance of occurrence) and 500-year (0.2 percent annual chance of occurrence) floods
Sea Level Rise	Medium	Significant exposure of regional resources likely by end of century with a 50-year or 2 percent annual chance storm surge (a combination of permanent and temporary flooding equivalent to 72 inches of sea level rise)
Temperature Change	Medium	Average temperatures projected to increase by 2 to 4 °F and extreme heat by 8 days per year by 2100 (90 °F +)
Precipitation Change	Low	Likely increase in intensity of events, limited change in overall rainfall
Rainfall-Induced Landslides	Low	Some emergency assets located in areas with “few landslides”
Wildfires	Low	No emergency assets located in high fire severity zones

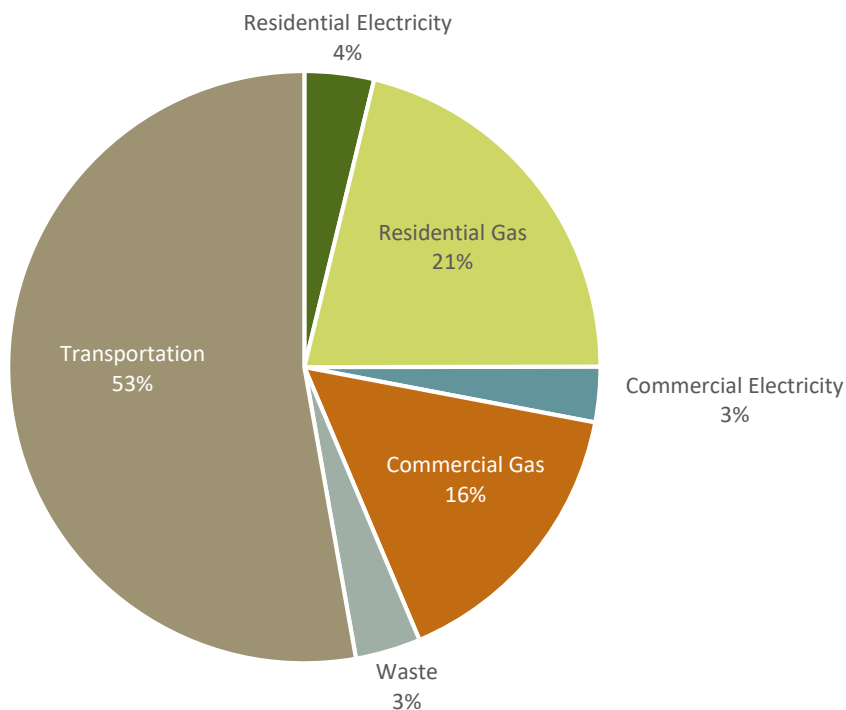
## Climate and Equity

Climate change can disproportionately affect the most vulnerable in our community, including low-income populations, communities of color, those with disabilities, and those experiencing homelessness. Because these communities are so susceptible to climate risks, working with them to develop climate solutions is imperative to ensure strategies truly meet the needs of the most vulnerable and often identifies strategies that are efficient, effective, and resilient to a range of common implementation challenges—leading to an Albany that is livable, equitable, resilient, and engaged for all.

### Albany's Greenhouse Gas Emissions

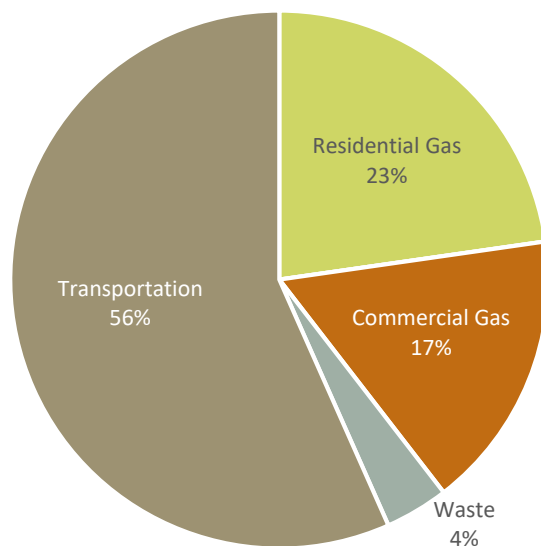
In 2017, Albany's greenhouse gas emissions stemmed mainly from building energy use and transportation (see **Figure 2** below). Transportation emissions stem largely from passenger vehicles but also include commercial trips and buses. Building energy emissions result from electricity and natural gas consumption. Emissions from solid waste was the smallest source.

**FIGURE 2. RELATIVE CONTRIBUTIONS TO ALBANY'S GREENHOUSE GAS EMISSIONS (2017).**



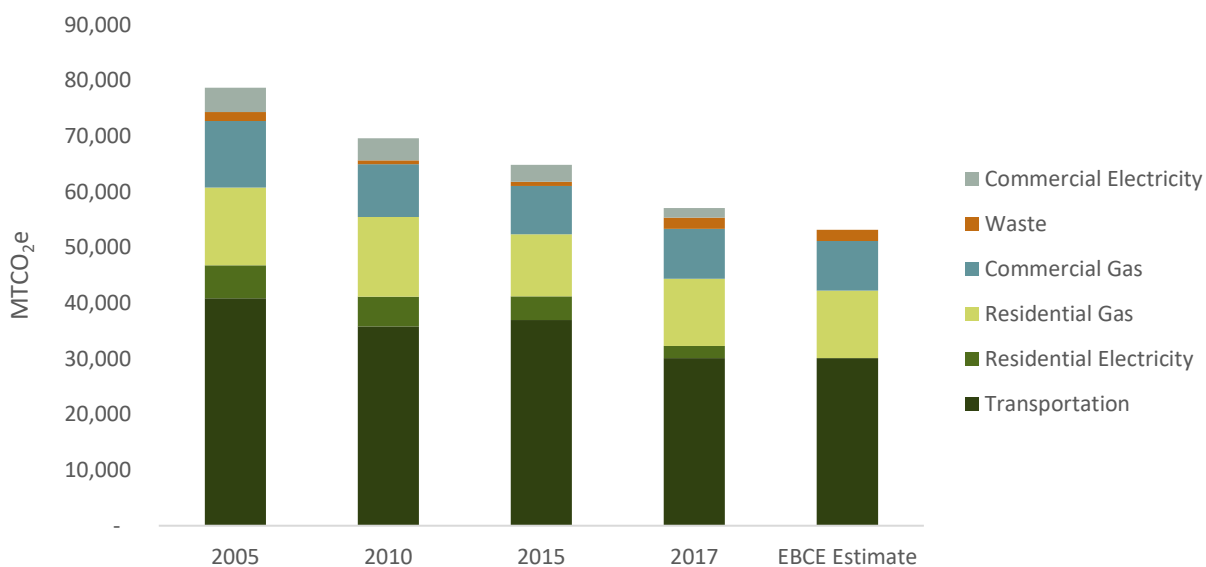
In 2018, the City of Albany City Council took action to enroll the Albany community in Brilliant 100, a 100% carbon-free electricity source offered by East Bay Community Energy (EBCE). This change reduced Albany greenhouse gas emissions by an estimated 3,884 MTCO<sub>2</sub>e—or 7% of 2017 emissions—per year. The remaining emissions in the building sector come from commercial, residential, and industrial natural gas use. **Figure 3** below shows an estimate of the City's emissions now that electricity is 100% carbon free.

**FIGURE 3. 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 Figure 4 below). When taking into consideration the emissions reduced from opting electricity accounts into EBCE’s carbon-free electricity service, we estimate that the City has reduced overall emissions by 32%.

**FIGURE 4. ALBANY COMMUNITY GREENHOUSE GAS EMISSIONS OVER TIME.**

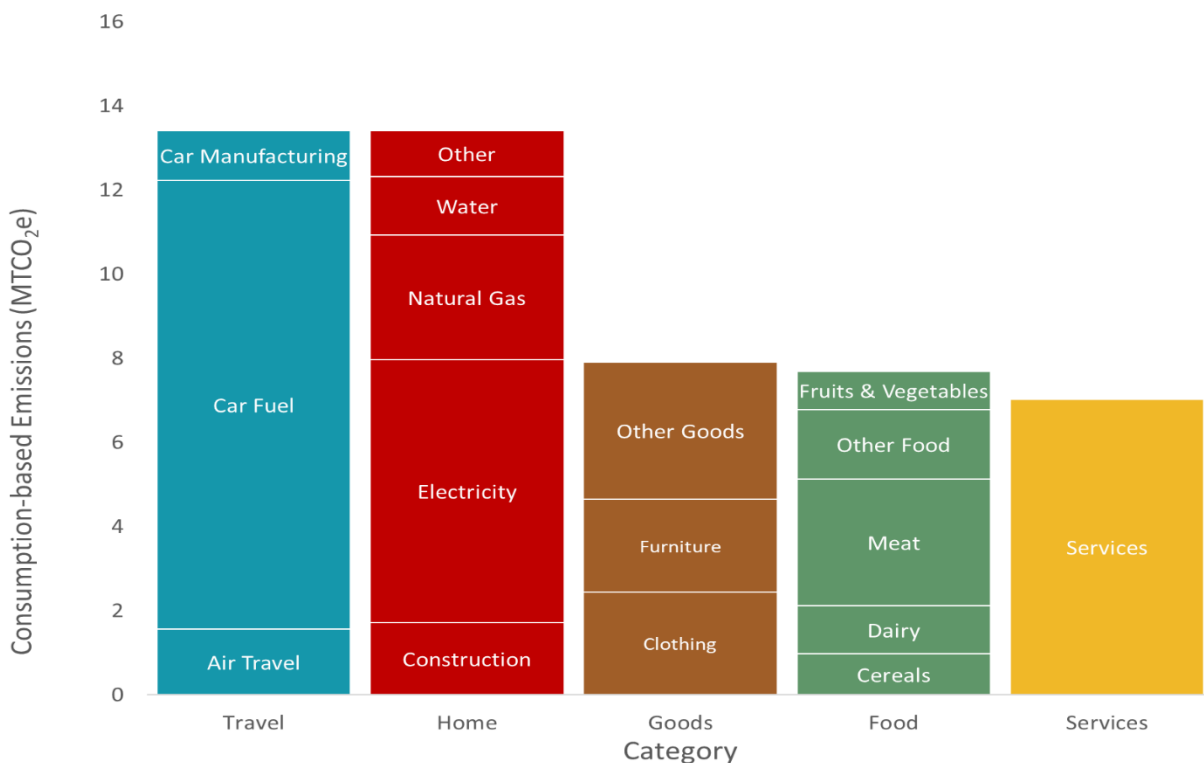


## Consumption-Based Emissions

While the above data represents emissions directly tied to actions taken within Albany, there are also upstream emissions tied to the products consumed by our community. The emissions associated with growing and transporting food or building a television occur outside our community, but our consumption of those items drive these emissions to occur. A consumption-based inventory attempts to quantify the emissions associated with the consumption of goods and services by a community.

The average Albany household generates most of their greenhouse gas emissions through car and air travel. However, significant emissions are also generated by the maintenance and operation of a home, food consumption, and the purchase of goods and services (see Figure 5 below). While these emissions are not included in the City's reduction targets of greenhouse gas inventory, this Plan does include strategies to address emissions from consumption with the understanding that their impact goes beyond Albany's borders.

**FIGURE 5. AVERAGE HOUSEHOLD CONSUMPTION-BASED GHG EMISSIONS BY CATEGORY (TOTAL = 54 MTCO<sub>2</sub>e/YEAR/HOUSEHOLD) (SOURCE: BERKELEY COOL CLIMATE CALCULATOR).**



# Progress to Date and Concurrent Efforts

## 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 Climate Action 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. Staff and the Climate Action Committee have worked to implement the CAP since its adoption, and as a result have succeeded in reducing emissions by 27% from 2005 to 2017.

The City's CAP is now relatively complete, with a large percentage of measures 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, and execution of land use and waste reduction policies. Staff 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 specifically, 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.

## Reflections from Albany's First CAP

With one Climate Action Plan under its belt, Albany aims to incorporate lessons learned into the City's next phase of climate action. We learned that insufficient staffing and internal funding are the most significant barriers to successful implementation. Sufficient grant funding, regional partnerships, and a strong community voice were the ingredients for successful implementation.

Based on these findings, this phase of CAP development included a strong grounding in assessing and addressing feasibility of action implementation. All actions in this Plan were fully vetted by the public, staff, and subject matter experts and evaluated for various factors of feasibility, including public support, resource availability, and alignment with other City priorities and processes.



## CAP 1.0 Achievement Spotlight: East Bay Community Energy

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

In addition to joining EBCE, staff and the Sustainability Committee also 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 3,884 MTCO<sub>2</sub>e 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 Albany's 100% carbon-free electricity, Albany can further reduce its energy emissions, and bring the City closer to carbon neutrality.





# CARBON-FREE ALBANY

## We Can't Do It Without You!

In January 2019, the City launched **Carbon-Free Albany**, an interactive platform on which residents can calculate their own carbon footprint, discover resources that can help them reduce their footprint, and connect with neighbors and community groups to see what others in Albany are doing to go carbon-free. With Carbon-Free Albany, residents can take meaningful action to bring the City of Albany closer to its carbon emission reduction targets, and help staff achieve the measures outlined in the Climate Action and Adaptation Plan.

Carbon-Free Albany hosts information on the City's carbon reduction targets, the updated Climate Action and Adaptation Plan, and national, state, and local resources for individual carbon emissions reduction strategies. City staff can send emails and updates to site users, providing new resources as they become available.

The platform encourages actions that range in cost, complexity, and impact. Actions labeled "easy" include committing to carpooling, switching to LED lightbulbs, and reducing waste output. More challenging actions, but with greater emissions reduction potential, include switching to all-electric space and water heating, and purchasing or leasing an electric vehicle. Now that residential and commercial electricity customers in Albany receive carbon-free electricity from East Bay Community Energy, individual actions that reduce fossil fuel consumption within the city are important steps toward citywide carbon neutrality. The platform not only suggests these actions, but also hosts links to rebates, incentive programs, and technical assistance.

Carbon-Free Albany will serve as a platform for continued community engagement with the Climate Action and Adaptation Plan. Every person in Albany has a role in helping the City meet its climate action goals. We hope you will actively engage with the Carbon-Free Albany platform to reduce your carbon footprint. Together, we can work to achieve Albany's goal of reaching carbon neutrality by 2050. We thank you for choosing to live in Albany, and for your partnership in working to ensure a vibrant and sustainable urban village.

## 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, including:

- **City of Albany General Plan:** The Albany General Plan presents a common future vision for the City in order 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. Also included in the general plan is a more aggressive target than the 2010 CAAP to reduce greenhouse gas emissions 60% below 2005 levels by 2035.
- **Active Transportation Plan:** The Active Transportation Plan was developed in response to the first Albany Climate Action Plan which recognized the importance of walking and biking for reducing traffic, air pollution, and energy consumption. 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.
- **Draft Adaptation Plan:** Building on the Local Hazard Mitigation Plan, the draft adaptation plan links potential adaptation options to the climate hazards they address. For each possible option, co-benefits, equity considerations, implementing partners, timeframe, funding needs, and ease of implementation are evaluated.
- **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 Infrastructure Plan:** The Green 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.

## Partnerships

The City works with partners in our community, across the state, and around the globe.



COMMUNITY	<p>Engage with City programs, follow applicable policies, and take actions to reduce emissions.</p> <ul style="list-style-type: none"> <li>• Residents</li> <li>• Businesses</li> <li>• Institutions (UC Village: UC Berkeley student housing; Albany Unified School District)</li> </ul>
UTILITIES	<ul style="list-style-type: none"> <li>• <b>Solid Waste &amp; Recycling:</b> Current service provided by private hauler Waste Management of Alameda County.</li> <li>• <b>Electricity:</b> Current service and billing provided by Pacific Gas &amp; Electric (PG&amp;E). Electricity procured by East Bay Community Energy (EBCE).</li> <li>• <b>Natural Gas:</b> Current service provided by Pacific Gas &amp; Electric (PG&amp;E).</li> <li>• <b>Water:</b> 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.</li> </ul>

REGIONAL	<ul style="list-style-type: none"> <li>• <b>Association of Bay Area Governments (ABAG):</b> Regional planning agency that provides assistance to local governments, including a focus on sustainability, climate adaptation, resilience, and equity issues.</li> <li>• <b>Bay Area Regional Energy Network (BayREN):</b> 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.</li> <li>• <b>East Bay Energy Watch (EBEW):</b> Partnership of local governments in Alameda and Contra Costa Counties and PG&amp;E. Utilizes funding from utility ratepayer funds through the CPUC to administer regional energy programs.</li> <li>• <b>Bay Area Air Quality Management District:</b> Regulates air pollution in the nine county Bay Area and provides policies and programs to reduce emissions.</li> <li>• <b>San Francisco Bay Conservation and Development Commission (BCDC):</b> Regulates development along the San Francisco Bay, including Albany's waterfront.</li> <li>• <b>East Bay Regional Park District:</b> 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.</li> <li>• <b>Metropolitan Transportation Commission (MTC):</b> Transportation planning, financing, and coordinating agency for the nine county Bay Area.</li> <li>• <b>Bay Area Climate Adaptation Network (BayCAN):</b> 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.</li> </ul>
COUNTY	<ul style="list-style-type: none"> <li>• <b>Alameda County Office of Sustainability:</b> Provides resources and opportunities for idea sharing regarding sustainability initiatives to local jurisdictions.</li> <li>• <b>Alameda County Office of Emergency Services:</b> County agency providing resources and support for emergency response and preparedness activities.</li> <li>• <b>Alameda County Transportation Commission:</b> County agency responsible for coordinating countywide transportation planning efforts and administering local, regional, state and federal funding for transportation projects.</li> <li>• <b>East Bay Community Energy (EBCE):</b> 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&amp;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.</li> <li>• <b>Stopwaste (Alameda County Waste Management Authority):</b> 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.</li> </ul>
STATE OF CALIFORNIA	<ul style="list-style-type: none"> <li>• <b>California State Legislature:</b> Elected body that sets State policy</li> <li>• <b>California Public Utilities Commission (CPUC):</b> Regulates public utilities providing electric power, natural gas, telecommunications, and water.</li> <li>• <b>California Energy Commission (CEC):</b> 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.</li> <li>• <b>CalEPA:</b> State agency focused on public health, environmental quality and economic vitality.</li> <li>• <b>CalRecycle:</b> CalEPA branch that oversees the state's waste management, recycling, and waste reduction programs.</li> <li>• <b>Building Standards Commission (CBSC):</b> State agency responsible for managing the development, adoption, approval, publication, and implementation of California's building codes.</li> <li>• <b>California State Parks:</b> Agency managing the California state parks system, and property owner of portions of the City's waterfront which are subject to sea level rise.</li> <li>• <b>California Coastal Commission:</b> State agency regulating land use and public access to the coastal zone, including the Albany waterfront.</li> <li>• <b>Cal-OES:</b> State agency responsible for overseeing and coordinating emergency preparedness, response, recovery and homeland security activities, and overseeing the City's Local Hazard Mitigation Plan.</li> <li>• <b>CAL FIRE:</b> Agency responsible for fire protection, forestry, and fire emergency services.</li> <li>• <b>Caltrans:</b> State agency responsible for managing the state highway system, including I-80, I-580, and San Pablo Avenue in Albany.</li> </ul>
FEDERAL	<ul style="list-style-type: none"> <li>• <b>Environmental Protection Agency (EPA):</b> Administration of Federal environmental policies and programs</li> <li>• <b>Federal Emergency Management Agency (FEMA):</b> US Homeland Security agency responsible for coordinating the response to major disasters, including support for hazard mitigation and disaster preparedness programs.</li> </ul>
NGOS	<ul style="list-style-type: none"> <li>• <b>Climate Mayor's Network:</b> 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.</li> <li>• <b>International Council for Local Environmental Initiatives (ICLEI):</b> Global network of cities, towns and regions committed to building a sustainable future, providing support for climate action planning and implementation.</li> <li>• <b>Intergovernmental Panel on Climate Change (IPCC):</b> Organization synthesizing and communicating the work of climate scientists.</li> </ul>



# Plan Overview

## 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.

**FIGURE 6. PLAN DEVELOPMENT TIMELINE (JULY 2018-OCTOBER 2019)**



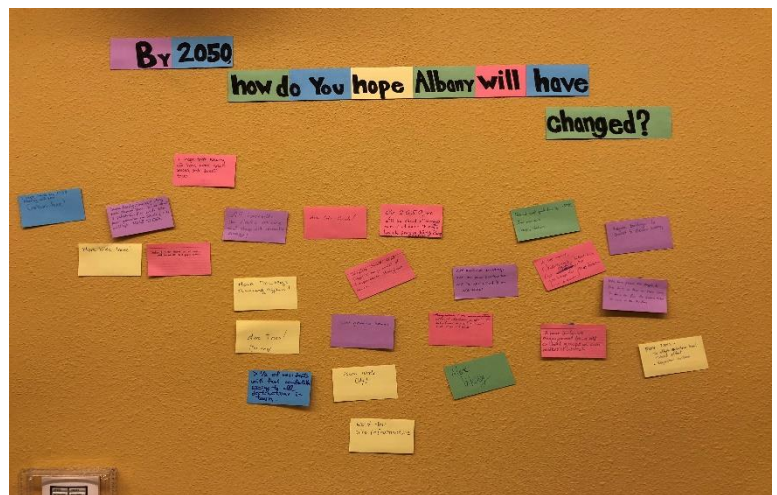
This Plan was developed with the time and dedication from Albany community members and City staff. Key elements of the community engagement process included:

- **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 will be distributed to solicit feedback on the draft plan. The initial survey received over 300 responses.
- **City staff interviews:** The planning process included one-on-one interviews with key City staff from the Public Works, Transportation, City Management, Sustainability, Fire, and Community Development departments. The interviews asked staff about the biggest potential opportunities and challenges around taking climate action in Albany.
- **Climate Action Committee and subcommittees:** A citizen-led Climate Action Committee (formerly Sustainability Committee) met on an ongoing basis throughout the planning process to identify, assess, and formalize the goals and strategies of the plan. The Committee includes representatives from the community that are well versed in or professionally involved with climate change issues. 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.
- **Public workshops:** 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 groups 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 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, including the Albany Property Rights Advocates, Albany Rotary, and the University of California Village Residents' Association.
- **Engagement with decision makers:** The draft Climate Action and Adaptation Plan was presented to the 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 will be incorporated into the final Plan.
- **CAP 2.0 email list:** Community members were able to opt-into a "CAP 2.0 email list". The email list was used to inform community members about opportunities to get involved in the planning process or provide feedback on Climate Action Committee meeting materials.

## We Heard You!

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, tree-lined, and resilient Albany (see Figure 7). 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.



**FIGURE 7. VISIONING EXERCISE FROM COMMUNITY WORKSHOP.**

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.

## 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 (see Figure 8).

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, as well as consider public health, environmental impact, and minimization of resource use when developing the Climate Action & Adaptation Plan measures. The respondents also indicated that the City and its residents should prioritize decreasing emissions from energy use in buildings and the transportation sector (see Figure 9).

## Recurring Themes

The following themes emerged at each stage of the planning process. 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 (see next page).

The themes that emerged at each stage of the planning process guided development of the objectives and strategies that make up the Plan, ensuring the Plan reflects the Albany community's vision for reducing emissions and achieving carbon neutrality by 2050.

# COMMUNITY PRIORITIES

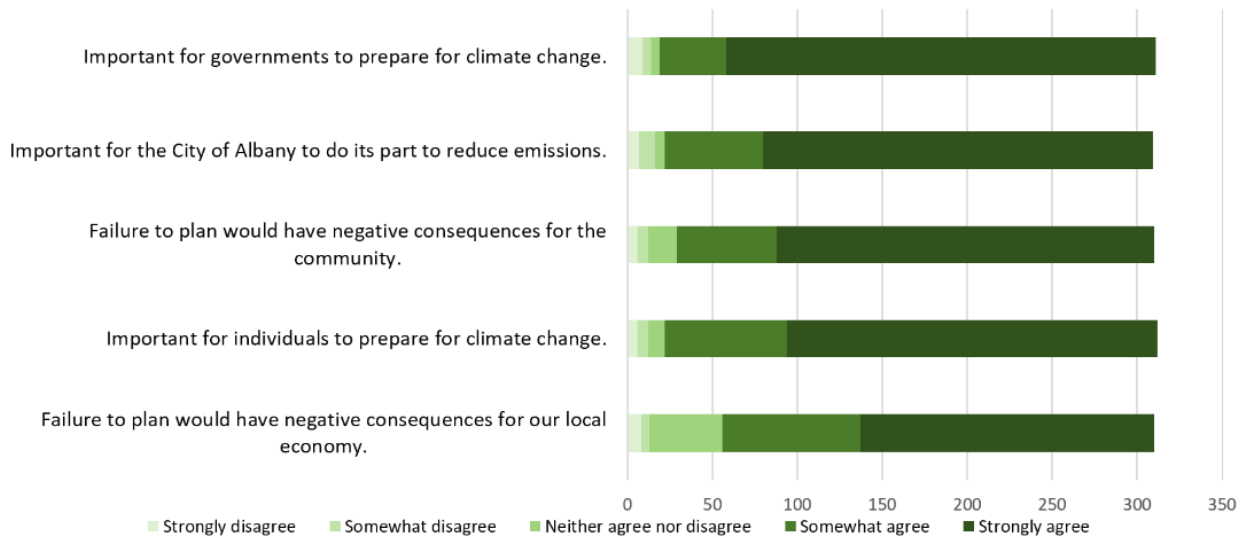


FIGURE 8. SURVEY RESPONDENTS INDICATED SUPPORT FOR CITY AND INDIVIDUAL CLIMATE ACTION.

# PRIORITIZATION OF EMISSIONS SECTORS

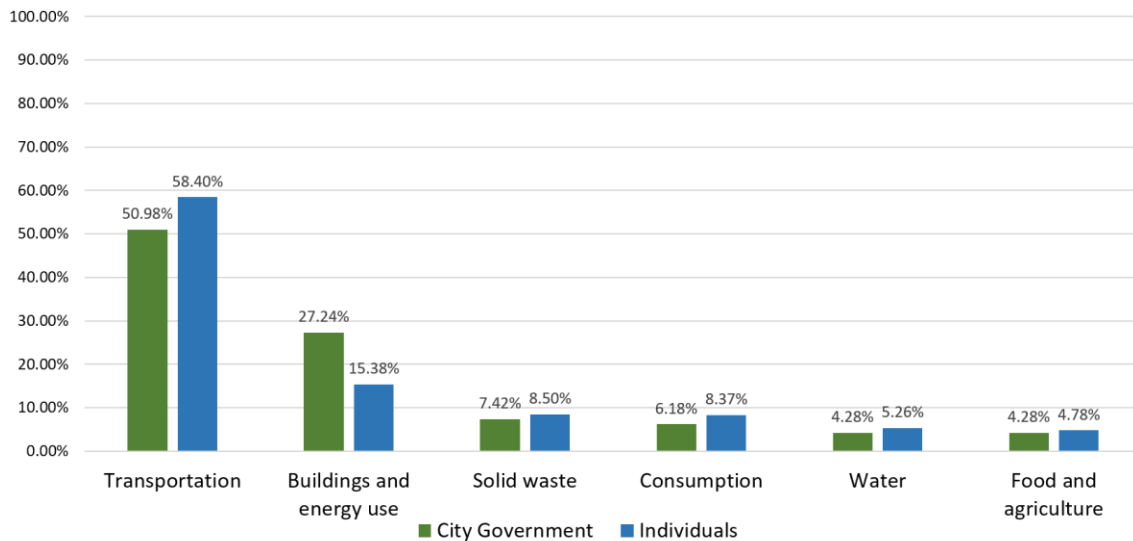


FIGURE 9. PRIORITIES FOR REDUCING GREENHOUSE GAS EMISSIONS FROM SURVEY RESPONDENTS.

### Active Transportation

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

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



### Fuel Switching

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.

- *"Support transition to e-vehicles"*
- *"Encourage (tankless) on-demand hot water heaters or electric"*



### 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.

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



### Smarter Consumption

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

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

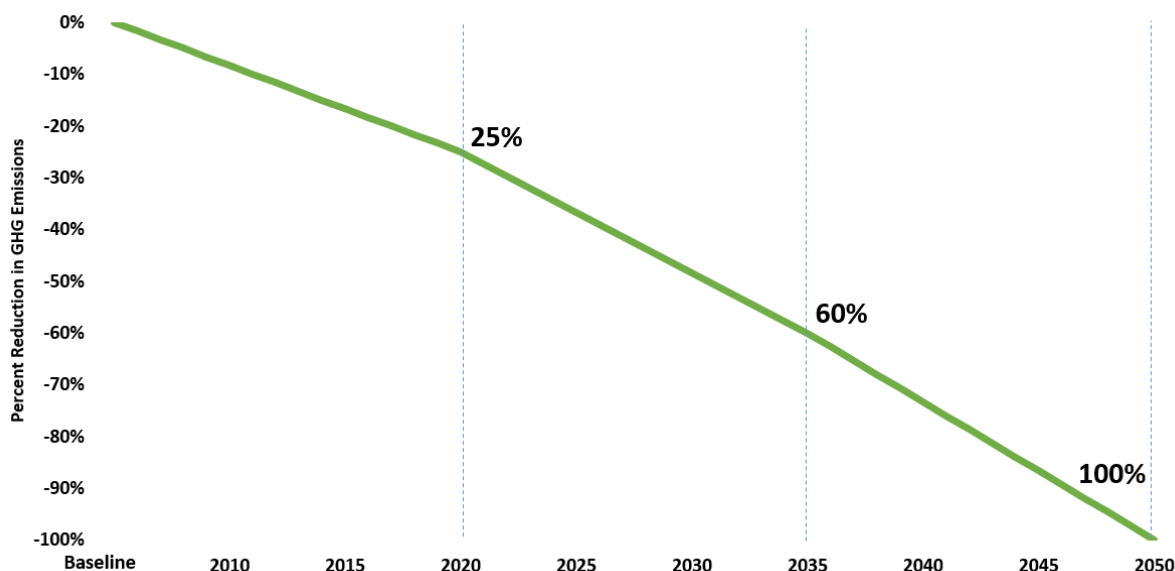


## Goals

As part of the 2016 General Plan process, Albany adopted the following short- and long-term goals for reducing greenhouse gas emissions, compared to 2004 baseline emission levels:

- 60% reduction by 2035.
- Carbon neutrality by 2050.

**FIGURE 10. GREENHOUSE GAS EMISSIONS REDUCTION GOALS FOR THE ALBANY COMMUNITY.**



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:

- While part of the Paris Agreement, the United States had committed 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. The new Executive Order B-55-18 calls for a new statewide goal to achieve carbon neutrality by 2045.
- The City of Berkeley's (CA) goal is both net-zero carbon emissions and an 80% emissions reduction by 2050 (vs. 2000 levels).
- The City of Piedmont (CA) also 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.



### What is Carbon Neutrality?

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





Albany has set a goal to achieve carbon neutrality by 2050. 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<sub>2e</sub> still emitted will be balanced with an equivalent amount of CO<sub>2e</sub> removed, until the original emissions source is eliminated. CO<sub>2e</sub> 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.

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. Together, we can achieve carbon neutrality in the City of Albany.



## Summary of Strategies and Actions















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

	<p><b>Strategy 1: Electrify our buildings.</b></p> <p>This first strategy leverages and sets the foundation for long-term savings from clean electricity, and involves consumer purchasing choices that have long lag times (e.g., installing sustainable building materials).</p>
	<p><b>Strategy 2: Transition to low-carbon transportation.</b></p> <p>This strategy leverages the current Active Transportation Plan and active public organizations, while addressing one of the top emissions sources and consumer purchases with long lag times (e.g., purchasing a new vehicle).</p>
	<p><b>Strategy 3: Make our economy carbon-free.</b></p> <p>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.</p>
	<p><b>Strategy 4. Accelerate resiliency for all.</b></p> <p>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.</p>

# Strategies and Actions

## How to Read the Strategies and Actions

Each strategy begins with an Overview describing the strategy, including its 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).

Actions			
Briefly explains a distinct action supporting a strategy. Includes unique identifier.			
<hr/>			
<b>Cost to community</b>		<b>Cost to City</b>	
	<b>High household investment:</b> >\$15,000		<b>High City investment:</b> >\$250,000
	<b>Moderate household investment:</b> \$1,000-\$15,000		<b>Moderate City investment:</b> \$25,000-\$250,000
	<b>Low household investment:</b> \$ < \$1,000		<b>Low City investment:</b> <\$25,000
<hr/>			
<b>GHG emissions reduction potential</b>			
	Contributes >50% of GHG emissions reduction goal for strategy.		
	Contributes 25-49% of GHG emissions reduction goal for strategy.		
	Contributes 10-24% of GHG emissions reduction goal for strategy.		
	Contributes <10% of GHG emissions reduction goal for strategy or lays foundation for other efforts (may not itself reduce emissions)		
<b>Resilience</b>			
	Action builds community resilience to climate change impacts.		
<b>Feasibility</b>			
	Action is highly feasible technically, politically, and socially under current conditions.		
<b>Equity</b>			
	Action significantly benefits and empowers the City's vulnerable populations.		
<b>Leadership</b>			
	Action has high potential for Albany to innovate and demonstrate its leadership in climate action		
<hr/>			
<b>Timeframe</b>			
Near-term	Next 0-3 years		
Mid-term	Next 4-7 years		
Long-term	8 or more years		
<hr/>			



## Strategy 1: Electrify Our Buildings.

*Relevant sectors: Residential and Commercial Buildings*

### Overview

With a 100% renewable electricity pathway identified and underway through East Bay Community Energy's service and programs, the City plans to prioritize transitioning Albany residents and businesses from using fossil fuels to electric energy. This includes actions to incentivize or require a shift from natural gas infrastructure to all-electric infrastructure in both current and new buildings, as well as actions promoting energy conservation and efficiency. Electrifying City facilities will demonstrate the feasibility and benefits of this approach. Electrifying buildings will address the City's second-highest emissions source, institutionalize a more reliable, low-cost energy source, and bring economic relief from high energy bills. This section focuses on electrification rather than production of renewable energy resources. However, local renewable resources are crucial for resilience, and measures to accelerate their adoption can be found both here and in Strategy 4: Accelerate resilience for all.

### Climate Connection

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

### What We're Already Doing



- Promoting commercial and residential energy efficiency incentive programs.

### Goals





- Eliminate natural gas from new construction.
- Eliminate natural gas in existing buildings.











## Actions























### Goal 1: Eliminate natural gas from new construction.

Action	Cost	Benefits	Timeframe
<b>Approach: Mandate all-electric construction.</b>			
1.1.1 Adopt regulations to require all-electric buildings for new construction and major remodels/redevelopment. Options such as building code updates or ordinances should be explored as tools for transitioning new construction to all-electric. Ideally, these regulations would cover both new construction and major retrofits of existing buildings.			Near-term

### Goal 2: Eliminate natural gas in existing buildings.

Action	Cost	Benefits	Timeframe
<b>Approach: Electrify City facilities.</b>			
1.2.1 Work with regional energy partnerships to develop and implement an Electrification Action Plan for all City facilities. Include new and existing buildings, incorporate strategies to address electricity storage, and focus on highlighting any hurdles or solutions that would be applicable to the broader community.			Near-term
<b>Approach: Educate the community on fuel switching needs, benefits, and methods.</b>			
1.2.2 Coordinate with regional efforts to conduct outreach and training with local contractors and businesses on electrification. Working with installers and other trade services promotes green job creation. 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

Action	Cost	Benefits	Timeframe
1.2.3 <b>Connect landlords with contractors and information about electrification.</b> The rental community presents a significant opportunity to realize benefits from switching to electric. Working with landlords directly to provide information and tools for transitioning to electric is an important foundational component of a broader electrification incentive or mandate program.			Near-term
1.2.4 <b>Work with regional energy partnerships to invest in electrification financing programs such as on-bill financing and metered energy efficiency.</b> Working with third-party entities allows the City to leverage incentive systems for electrification, such as options for financing retrofit projects and paying back loans through power bills.			Near-term
<b>Approach: Incentivize fuel switching.</b>			
1.2.5 <b>Deploy an incentive program for electrification.</b> The City should work with EBCE or other regional partnerships to create financial incentives to electrify new and existing buildings. For example, rebates for panel upgrades, electric appliances, and heat pumps can encourage the transition to electric energy use in homes and businesses.			Near-term
1.2.6 <b>Adopt an administrative policy that states natural gas equipment is not required to be installed in construction projects.</b> This policy could enable all-electric construction and could prevent potential hurdles in the process of permitting and constructing all-electric buildings.			Near-term
1.2.7 <b>Pursue increase in Utility User Tax for natural gas.</b> To incentivize the transition to all-electric buildings, a Utility User Tax increase would put a price on carbon and generate revenue for fuel-switching incentives and programs. This action would require that the City work with PG&E to allow for differential billing for electricity within their billing systems, but this might be possible through a regional partnership.			Mid-term

Action	Cost	Benefits	Timeframe
1.2.8 <b>Partner with EBCE to research feasibility of requiring electric panel upgrades during major retrofits.</b> Readying electric panels for the transition to all-electric is a crucial foundational step for households and businesses. For example, when an upgrade is made for solar or electric vehicles, it is sized to consider future electric appliances or infrastructure.	  	  	Near-term
1.2.9 <b>Work with EBCE to continue incentivizing local renewable energy projects.</b> Through collaboration with EBCE, the City could leverage existing incentives to increase renewable energy utilization and generation throughout the entire city. These incentives would include support for solar installation on low-income housing and the creation of green jobs.	  	  	Mid-term
<b>Approach: Mandate fuel switching.</b>			
1.2.10 <b>Identify a pathway for requiring all-electric energy in existing and new buildings.</b> 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.	   	  	Mid-term
<b>Approach: Coordinate with broader efforts to spur electrification.</b>			
1.2.11 <b>Support State efforts to decarbonize buildings and vehicles.</b> The State of California has exhibited a commitment to decarbonization, including recent 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 would be a relatively low-effort way to realize cascading benefits for Albany.	 		Mid-term





## Strategy 2: Transition to Low-Carbon Transportation.

*Relevant sectors: Transportation*

### Overview

Transportation is the highest source of greenhouse gas emissions in Albany. The 100% renewable energy pathway, along with increasing interest in alternative fuel vehicles, walking, biking, and transit, suggest that Albany is ready to transition to low-carbon transportation. While 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, Albany plans to take actions to encourage electric passenger vehicle adoption. 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, and local air pollution from internal combustion engines is eliminated.

Low-carbon transportation also includes actions to incentivize use of carpooling, transit use, and a 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 active transportation. Making it easy to choose a low-carbon option means more residents 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.

### Climate Connection

- Fossil fuel use from transportation is responsible for the majority of current community greenhouse gas emissions in Albany.

### Goals

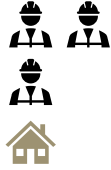














- Decrease passenger vehicle miles traveled (VMT) through use of alternative modes.
- Transition passenger vehicles to electric alternatives.









### What We're Already Doing

- Supporting Safe Routes to School Programming.
- Promoting existing events such as Bike About Town and Bike-In Movie Night.
- Working with SunShares to provide bulk discounts for the purchase of electric vehicles and chargers.












## Actions

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

Action	Cost	Benefits	Timeframe
<b>Approach: Encourage active transportation through infrastructure and parking management.</b>			
2.1.1 <b>Develop a new Active Transportation Plan (ATP).</b> A new ATP will serve as the basis for prioritizing active transportation projects in the City and should emphasize multimodal transportation, access to transit, pedestrian safety, bike racks and lockers, beautification, green infrastructure, and a seamless regional bike network that favors protected bike lanes where feasible.	 	   	Near-term
2.1.2 <b>Research feasibility and emissions impact of implementing a parking management strategy to reduce vehicle miles travelled.</b> This research would explore the costs, benefits, and considerations of introducing a parking management strategy that incentivizes alternative forms of travel and reduces emissions from circling.	 		Mid-term
<b>Approach: Encourage shared mobility programs.</b>			
2.1.3 <b>Research and develop a curb management program that prioritizes carbon reduction.</b> Elements of the program would include 1) establishing designated rideshare and third-party carpooling parking and loading zones and 2) integrating scooter and bike share docks, bike parking, electric vehicle charging, and green infrastructure.	 		Near-term
2.1.4 <b>Introduce a policy that allows carshare vehicles to park beyond stated time limits.</b> This action aims to minimize single occupancy vehicle usage and reduce traffic congestion by incentivizing carsharing. Carsharing provides an opportunity for reduced fuel costs and can improve air quality.	 		Near-term

2.1.5	<b>Work with third party programs to provide shared mobility options.</b> There are a variety of companies that provide shared mobility options such as electric bikes and scooters. The City should work with these companies to encourage the provision of these services to Albany residents and visitors, while considering safety implications.			Near-term
2.1.6	<b>Explore the demand for an electric shuttle to BART stations, and along Solano and San Pablo Avenues.</b> Providing carbon-free connections to major transit and mixed-use hubs could make a notable contribution to lowering transportation-related emissions. The City should explore 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.			Mid-term
<b>Approach: Encourage density through infill development.</b>				
2.1.7	<b>Amend the zoning ordinance to allow higher density development.</b> These amendments should include increasing building heights, allowing projects to build out to approved densities, and should consider opportunities for mixed land use. Increased density can minimize vehicle miles travelled.			Near-term
2.1.8	<b>Introduce a unit-parking swap program for developers.</b> This program would allow developers to add additional units to a building beyond current restrictions in exchange for the sacrifice of a parking spot. 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	Cost	Benefits	Timeframe
Approach: Increase access to electric vehicle charging infrastructure.			
2.2.1 <b>Create an Electric Vehicle (EV) Action Plan.</b> An EV Action Plan would: 1) address increased public access to chargers, 2) identify locations for chargers in commercial areas, 3) consider installing charging infrastructure integrated into streetlights, 4) consider Smart cable technology, 5) address barriers to charging for garage-free homes and rental properties, 6) increase use of EVs in car sharing programs, and 7) assess the potential to partner with third-party EV charging station providers to lower program and construction costs.	 	 	Near-term
2.2.2 <b>Adopt an EV charging planning code amendment that would increase the charging requirements for new construction and renovations.</b> This action would explore increasing the number of EV chargers publicly available. This could be done through third party partnerships which would help reduce City costs.	 		Near-term
2.2.3 <b>Work with gas stations to provide alternative fuels.</b> The City could work with existing gas stations to identify opportunities for alternative fuels as well as identifying areas for new stations, such as an EV charging station by the freeway to serve both Albany residents and through-traffic. Improving accessibility to fueling stations could persuade consumers who are worried about refueling limitations to make the switch to alternative fuel vehicles.	 	 	Mid-term



## Strategy 3: Make Our Economy Carbon-Free.

*Relevant sectors: Solid waste*

### Overview

Albany is committed to reducing greenhouse gas emissions from individual consumption. While behavior change is challenging, many residents and businesses are already taking positive actions to reduce their individual carbon footprints. The City plans to lead by example by updating the Environmentally Preferable Purchasing Policy to focus on the purchases with the greatest opportunity to reduce greenhouse gas emissions. Ultimately, emissions from consumption must be reduced through consumer behavior change strategies to reduce waste of all kinds, incentivize a local, circular, and re-use economy, and store carbon—instead of emit carbon—in buildings. 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 significant source of climate pollution.

### Goals






- Decrease environmental impacts of municipal purchasing.
- Promote the development of a low-carbon economy.

### What We're Already Doing
















- Increasing community engagement with the Carbon-Free Albany platform to inform the public about the relationship between individual consumption and the community's emissions.  
Encouraging actions that minimize these emissions.
- Promoting the circular economy through existing events such as fix-it clinics and swap events.
- Amplifying "Shop Local" campaigns.
- Maintaining partnership with Stopwaste to reduce food waste through education on proper food storage techniques and sell-by dates.

## Actions













### Goal 1: Decrease environmental impacts of municipal purchasing.

Action	Cost	Benefits	Timeframe
3.1.1 <b>Update and simplify the municipal Environmentally Preferable Purchasing (EPP) policy.</b> An updated EPP would prioritize improvements for the highest emissions impact purchasing decisions within each department, including vehicle and fuel purchases and low-carbon concrete. This action would also include creating environmentally preferable purchasing procedure and educate staff responsible for purchasing.	 	  	Near-term

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

Action	Cost	Benefits	Timeframe
<b>Approach: Mandate and encourage waste reduction.</b>			
3.2.1 <b>Partner with StopWaste to develop and then adopt an ordinance requiring reusables for dine-in restaurants and sustainable take-out foodware.</b> This effort 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 <b>Work regionally to support and facilitate food donation programs.</b> 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 <b>When negotiating new franchise agreement for solid waste and recycling, include innovative strategies to incentivize waste reduction that could impact upstream consumer habits.</b> 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.	  	  	Near-term



Approach: Reduce consumption-related emissions.				
3.2.4	<p><b>Partner with regional entities to encourage carbon-smart building materials through contractor education and financial incentives.</b> This work 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 a whole-building or material-specific policies.</p>	 	 	Mid-term
3.2.5	<p><b>Establish a Farmers' Market.</b> 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.</p>	 		Near-term
3.2.6	<p><b>Promote and facilitate utilization of the sharing economy through an outreach and advertisement campaign.</b> Increased awareness of available options such as tool-lending libraries, car share, swap events, and service websites support the growth of a local reuse economy and discourage consumption of high-carbon materials.</p>	 	  	Near-term



## Strategy 4: Accelerate Resiliency for All.

### Overview

Given the City of Albany's limited influence, the emissions reductions from City efforts to electrify buildings, transition to a fossil fuel-free transportation system, and promote low-carbon purchasing habits might not be enough to create a truly carbon-free Albany. Carbon must be stored in trees, landscapes, buildings, and infrastructure. It is also important to ensure all are prepared for, and able to bounce back from, the inevitable impacts of climate change.

This section prioritizes climate-adaptive plantings, compost, and mulching. These actions will increase urban tree canopy, store carbon, and provide shade. 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 patterns, 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, whatever lies ahead.

### Climate Connection

- Our natural lands and systems, including trees, have the potential to store and sequester carbon if these strategies are implemented.
- In many cases, extreme events will be made worse by climate change. Our most vulnerable populations are also most susceptible to extreme events and climate change.

### Goals




- Increase urban tree canopy cover.
- Increase resilience of built systems and infrastructure.
- Increase resilience of natural lands and systems.
- Address climate-related health risks.

### What We're Already Doing







- Continue to encourage parklet development. Determine parklet policies and procedures.
- Expanding capacity to provide accessible cooling centers, especially those most vulnerable to extreme heat.

















## Actions

### Goal 1: Increase urban tree canopy cover.
















Action	Cost	Benefits	Timeframe
<b>Approach: Increase urban tree canopy coverage.</b>			
4.1.1 <b>Create a comprehensive street tree plan.</b> A street tree 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, 3) developing a planting guide that prioritizes carbon sequestration, resilience, and other equitably-distributed co-benefits, and 4) devising a plan for retiring trees and addressing unintended consequences such as sidewalk uplifts. The plan should also include potential ways to support trees on private property.		 	Near-term

### Goal 2: Increase resilience of built systems and infrastructure.











Action	Cost	Benefits	Timeframe
<b>Approach: Increase the resilience of public projects and facilities.</b>			
4.2.1 <b>Prioritize adaptation and resilience in discretionary Capital Improvement Program (CIP) projects.</b> 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 <b>Work with EBCE to assess and improve energy resilience at critical facilities.</b> On-site PV and energy storage systems at appropriate scales would support the continued operation of critical services such as fire and police during a power outage. The City will work with EBCE to determine a funding strategy to prioritize and finance projects.		 	Mid-term

Action	Cost	Benefits	Timeframe
<b>Approach: Address issues with the electric grid.</b>			
4.2.3 <b>Address time-of use-issues by increasing storage capacity.</b> 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 energy storage infrastructure including permit streamlining if determined to be a significant constraint. This work would include regional collaboration to develop incentive programs.	 	 	Near-term
4.2.4 <b>Advocate for grid 2.0 initiatives.</b> 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
<b>Approach: Educate the community on green infrastructure improvements.</b>			
4.2.5 <b>Promote the use of climate adaptive plants and high carbon sequestering species in landscaping projects.</b> 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 climate-adaptive plants, applying compost, mulching, and reducing synthetic fertilizers to support soil health, store more water in the ground, and store carbon in soil, plants, and trees.	 	  	Near-term
4.2.6 <b>Work with FEMA and the City of Berkeley to update flood zone maps.</b> 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	Cost	Benefits	Timeframe
4.3.1 <b>Continue to restore and maintain creeks to accommodate increased rain events.</b> Creek restoration can reduce the likelihood and magnitude of flooding and support healthy habitat.	  	 	Mid-term
4.3.2 <b>Continue to manage wildfire risk by implementing vegetation management and fuel reduction programs.</b> 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.	  	 	Near-term
4.3.3 <b>Partner regionally to address coastal flooding impacts to the Albany waterfront and freeway entrance.</b> 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

Goal 4: Address climate-related health risks.

Action	Cost	Benefits	Timeframe
4.4.1 <b>Inventory, identify, and maintain adequate community-safe spaces for poor air quality.</b> Popular community gathering spaces must be made safe during air quality emergencies (smog or wildfire smoke). Options for improving safety include retrofits, upgrades, or other measures to ensure that these spaces are accessible and adequate for sensitive populations.	 	  	Near-term
4.4.2 <b>Strengthen emergency management capacity to prepare for and respond to the impacts of climate change.</b> 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.	  	 	Near-term



## What Now?

This bold 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 set the Albany community up to adapt successfully to a changing climate.

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*If we are to be successful, we must be bold and fair in implementation.*

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To be successful, we must also be bold and fair in implementation. We understand that implementation of innovative new strategies requires deviation from the status quo. However, we need to be creative and be willing to test new strategies and technologies. To manage risks, we need top-notch planning with explicit attention to risk management and a fair distribution of costs and benefits across communities. **This is how pioneers lead, and this is how Albany must lead too.**

The City of Albany will lead implementation of the Climate Action and Adaptation Plan. We plan to identify who will lead and partner on each action, a timeframe for implementation, key performance indicators to measure our progress along the way, funding strategies, and other key factors necessary for successful implementation.

Coupled with City leadership is community and individual leadership. We ask and encourage all Albany residents to do their part to eliminate carbon from homes, vehicles, and lifestyles. The City will provide resources and support to overcome barriers to successful transformation, and distribute them equitably to ensure those most vulnerable in our community can share in the benefits fairly. Along the way, we'll look to champions and visionaries in the community to challenge us all to do better.

If we remain as bold in implementation as we are with this Climate Action and Adaptation Plan, we may spur others to action and find that our Urban Village by the Bay is not only a healthy and enjoyable place to live, work, play, and visit but also has truly helped prevent global climate disruption, protecting our planet and our people for generations to come.

# Appendix

## 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 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 impact in some of the largest contributors to Albany's greenhouse gas emissions—travel, food, and household energy use. We recommend taking serious action to help Albany become a livable, equitable, resilient, and engaged carbon-neutral community.

### Electrify Our Buildings

- ☐ Install energy-saving appliances and fixtures, such as Energy Star Appliances and LED Lightbulbs.
- ☐ Reduce your natural gas use. Install electric furnaces, water heaters, dryers, stoves, etc. to transition to cleaner electricity.
- ☐ Choose EBCE's Renewable 100 service for your electricity source, to power your home with 100% renewable electricity. Opt up by calling 1-833-699 EBCE or visiting [ebce.org/opt-up](http://ebce.org/opt-up).
- ☐ Install low-flow showerheads and aerated faucets to reduce how much hot water you use.

### Transition to Low-Carbon Transportation

- ☐ Carpool at least one day each week. Take transit, carpool, walk, and/or bike instead.
- ☐ Use an electric 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 fly.

### Help Make Our Economy Carbon-Free

- ☐ Reduce your meat and dairy consumption – even one less day a week makes a big difference!
- ☐ 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](http://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 business.
- ☐ Reduce and eliminate single-use plastics. Carry your own reusable utensils and straws. Request less packaging when ordering take-out and bundling online delivery packages.

### Accelerate Resiliency for All

- ☐ Utilize Carbon Free Albany (<https://www.carbonfreealbany.org>) to see your household's carbon footprint and get ideas to reduce your environmental impact.
- ☐ 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 a 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.