



City of Lafayette

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# Environmental Action Plan



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# Introduction

## INTRODUCTION

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## EXECUTIVE SUMMARY

On November 13, 2006, the Lafayette City Council adopted the Environmental Strategy, which was then updated in 2011. The mission of the Strategy was to "...[develop] and [implement] environmental policies and programs that will enable the City and its residents to meet their present needs without sacrificing the ability of future generations to meet their needs." It was developed as a guide to help Lafayette think, act, and plan more sustainably by helping to understand the cause of environmental problems and developing criteria for evaluating the long-term impacts of the City's decisions. To monitor the community's progress in meeting its sustainability goals, the Environmental Task Force created a set of environmental indicators. Given current environmental trends and standards at the state and local levels, this Environmental Action Plan was developed by the Environmental Task Force to provide a more complete image of how the City can continue to reduce its environmental footprint and is intended to be a living document that will change in response to changing requirements, regulations, and circumstances.

The Action Plan is a policy document that includes goals and associated recommended programs, enabling the City to maintain local control while implementing State mandates to lower greenhouse gas emissions and to monitor other environmental factors. The recommended programs are not mandates, but rather are recommended ways of achieving GHG emissions reductions within the community. The Action Plan is intended to primarily be used by the City for guidance when developing or updating documents, policies, or procedures or when developing annual Work Plans, but also includes a number of programs that are related to the work of community groups and organizations. The Environmental Task Force will be a liaison for the community groups and organizations such as the Chamber of Commerce, Sustainable Lafayette, the Lafayette Community Garden, and local schools to implement the programs.

The Action Plan includes programs that will implicate staff time and resources. In order to provide a rough estimate of how much time will be required for each program, staff has used the following symbology throughout the document:

Symbol	Estimated Staff Time
\$	4 – 12 hours
\$\$	13 – 21 hours
\$\$\$	22 – 30 hours
\$\$\$\$	31 – 39 hours
\$\$\$\$\$	40+ hours

# Introduction

## INTRODUCTION

## RESOURCE IMPACT

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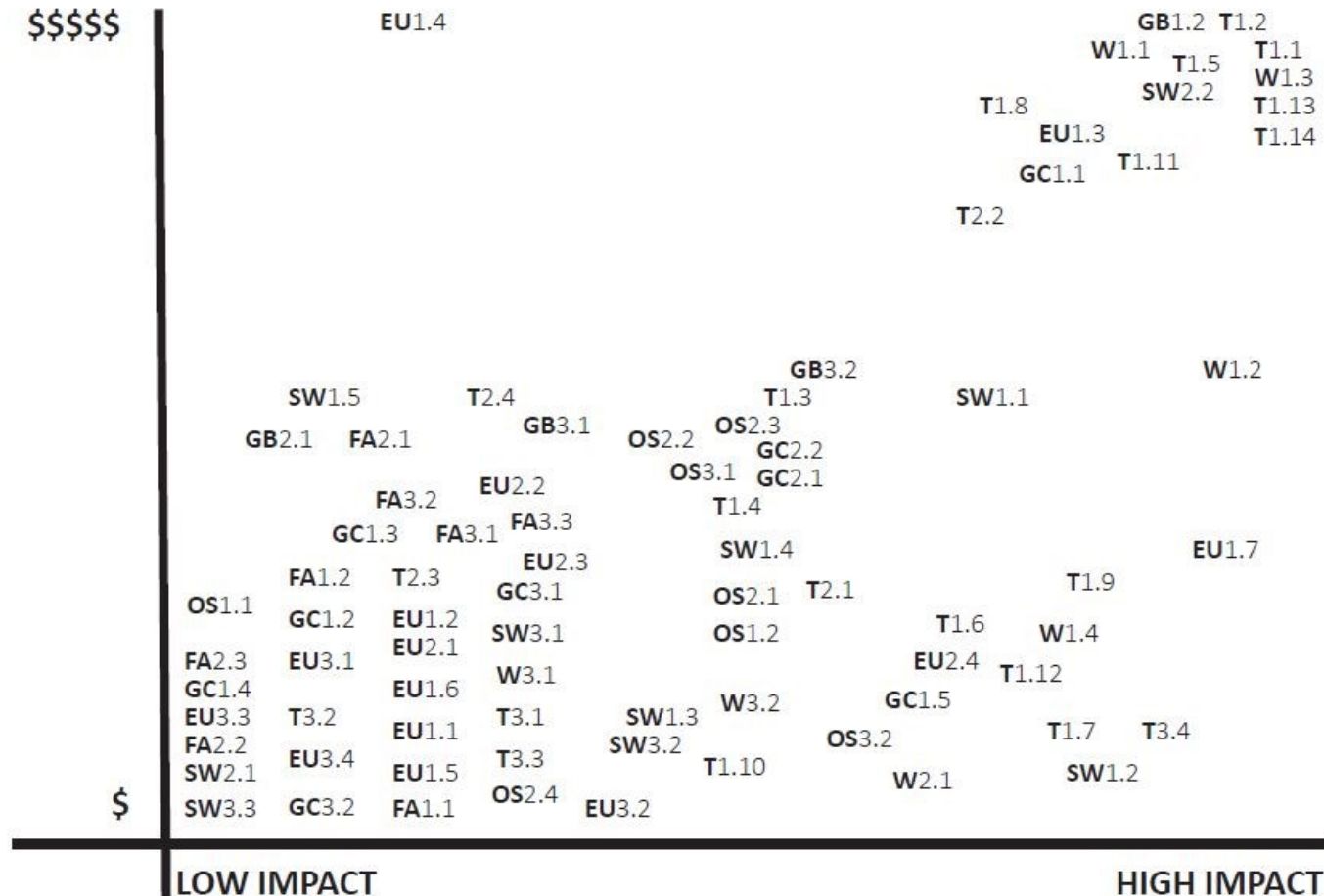
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Key: SW: Solid Waste      GC: Green Construction      T: Transportation  
 W: Water                      FA: Food and Agriculture      OS: Open Space  
 EU: Energy Use              GB: Green Business

# Greenhouse Gas Emissions Inventory

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The City of Lafayette began working with QuEST to collect Greenhouse Gas Emissions (“GHG”) inventories in 2005 through funding from the East Bay Energy Watch and has conducted a subsequent study each 5 years – 2010 and 2015. The GHG emissions inventory and forecast provides a summary of community-wide and municipal GHG emissions, GHG emissions by energy sector, energy use, and major sources of GHGs caused by activities in Lafayette. This data was used to develop reduction strategies and will be used as a baseline for future climate action planning projects. This inventory is based on a consistent approach using nationwide best practices and recommendations from Local Governments for Sustainability (ICLEI).

*Emissions not included in the 2015 inventory are:*

*Fire Station—energy use, fuel used by Fire Department vehicles, solid waste*

*Back-up generator*

*Veteran’s Memorial Construction (previously included in 2005 & 2010 inventories)*

*PG&E-owned streetlights*

*Alternate Daily Cover (ADC)*

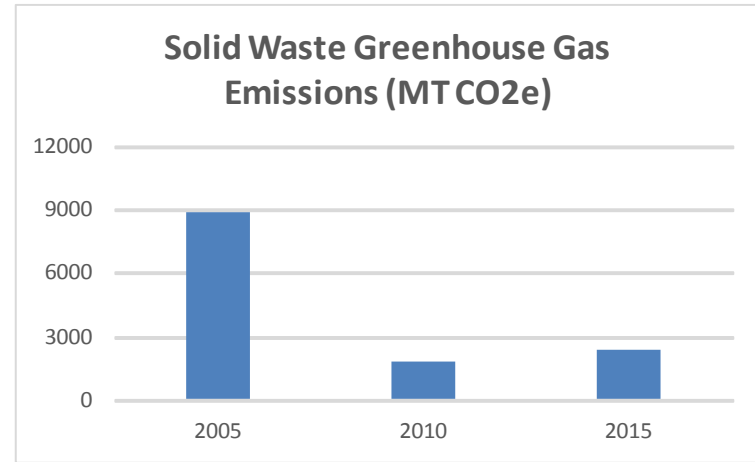
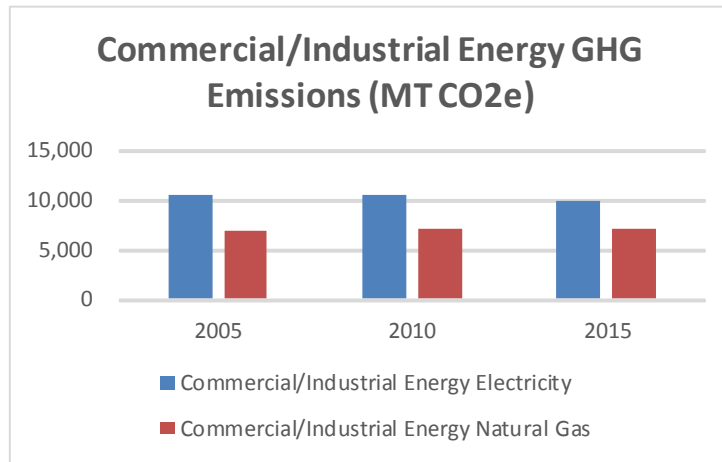
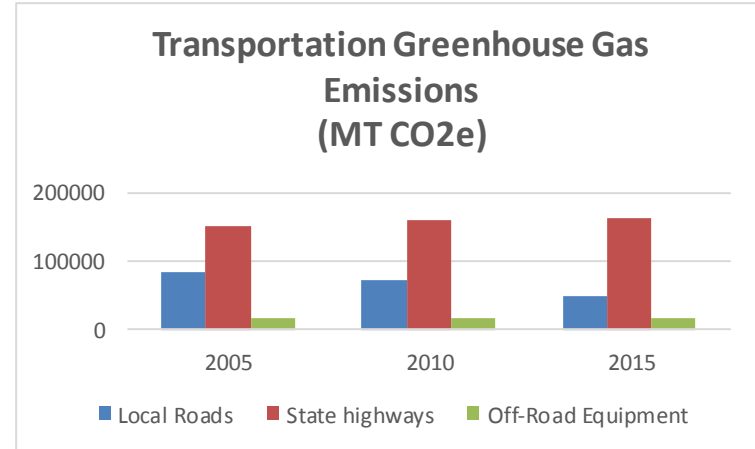
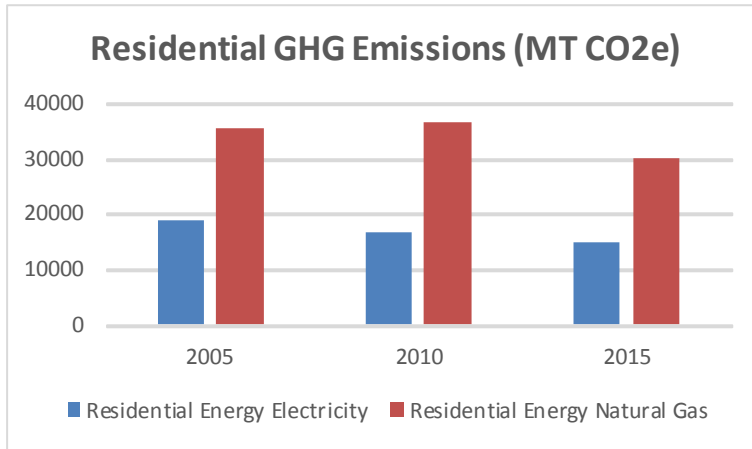
*\*The 2005 baseline inventory did not quantify emissions for wastewater, residential electricity, or off-road equipment; 2010 was used as a proxy for the baseline year.*

*\*Self-hauled waste information was only released by CalRecycle for the 2015 inventory.*

**COMMUNITY INVENTORY**

**Emissions Reductions Summary by Sector: 2005-2015 (Metric Tons CO2e)**

Sector	Source		Percent Change from 2005-2015	Percent Change from 2010-2015
Energy	Residential Energy	Electricity	-21%	-11%
		Natural Gas	-15%	-17%
	Commercial/Industrial Energy	Electricity	-6%	-5%
		Natural Gas	2%	-2%
Transportation	Local Roads	Local Roads	-43%	-33%
			8%	1%
	State Highways	State Highways		
Solid Waste	Off-Road Equipment (Residential)	Off-Road Equipment (Residential)	5%	5%
	Solid Waste Disposal	Landfilled Waste	-27%	36%
Wastewater	Wastewater Treatment		n/a	-2%
<b>Annual Emissions Total</b>			<b>-12%</b>	<b>-9%</b>



# Greenhouse Gas Emissions Inventory

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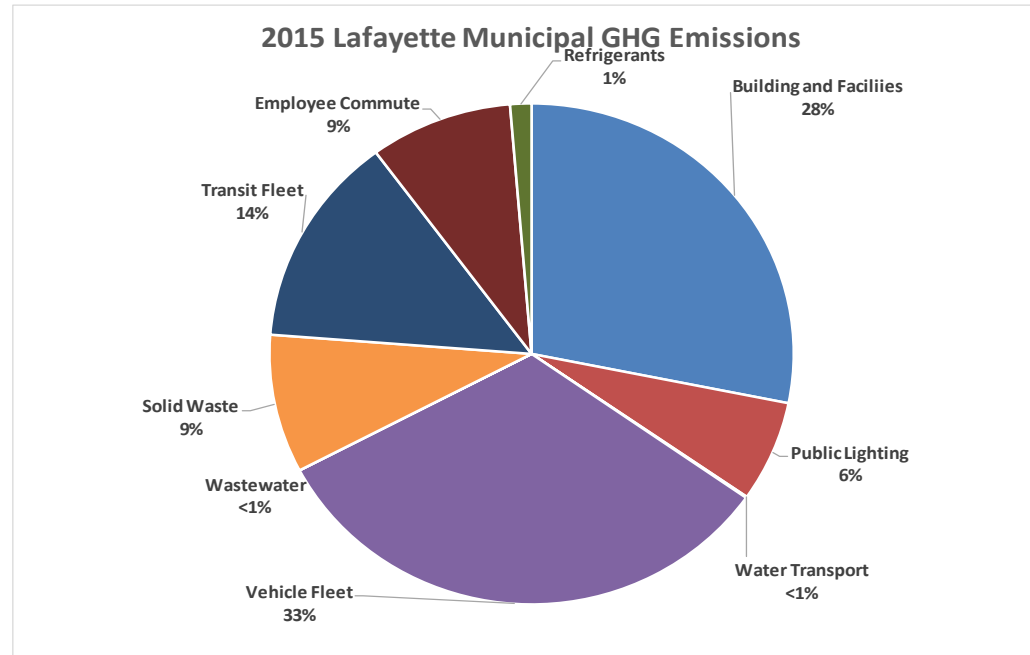
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	2005	2010	2015	Difference between 2005-2015	Difference between 2010-2015
<b>Building and Facilities</b>	209.45	269	252.5	21%	-6%
<b>Public Lighting</b>	52.5	64.3	58.38	11%	-9%
<b>Water transport</b>	0.7	0.68	0.66	-6%	-3%
<b>Vehicle Fleet</b>	327	204	292	-11%	43%
<b>Wastewater</b>	0.3	0.3	0	-100%	-100%
<b>Solid Waste</b>	56.89	41.85	80	41%	91%
<b>Transit Fleet</b>	56.8	183.7	122.4	115%	-33%
<b>Employee Commute</b>	84.97	84.11	79	-7%	-6%
<b>Refrigerants</b>	12.2	4.3	11.8	-3%	174%
<b>Total</b>	800.81	852.28	896.74	12%	5%

# Greenhouse Gas Emissions Inventory

## PROJECTIONS

A business-as-usual (BAU) forecast is an estimate of future energy use, accounting for anticipated population and commercial growth in Lafayette while assuming that energy consumption habits will remain constant. Various growth factors were used to forecast emissions through 2030. Projected household growth figures for Lafayette were obtained from Plan Bay Area’s 2012 **Sustainable Communities Strategy (SCS)** and used as a metric for estimating future emissions from electricity and natural gas consumption. Plan Bay Area was also used for the commercial sector projection. Job growth was taken into account in projecting future emissions from electricity and commercial gas use. The Metropolitan Transportation Commission was used to estimate vehicle miles traveled through 2030. The following tables outline business-as-usual GHG emissions, forecasted by sector:

*Community Metric Tons of Carbon Dioxide Equivalent (MT CO2e)*

Sector	2005	2010	2015	2020	2025	2030
Residential Energy	54,700	53,277	56,654	58,036	59,417	60,799
Commercial & Industrial Energy	18,215	17,484	18,281	19,134	20,088	20,992
Transportation	248,424	247,583	251,411	263,178	275,496	286,803
Solid Waste	8,892	1,764	1,840	1,920	2,004	2,091
Wastewater	600	600	612	628	643	660
<b>Total</b>	<b>330,831</b>	<b>320,708</b>	<b>328,798</b>	<b>342,946</b>	<b>357,648</b>	<b>371,345</b>
Percent change from baseline year	—	-3%	-0.06%	3.6%	8.1%	12%

*Municipal MT CO2e*

Sector	2005	2010	2015	2020	2025	2030
Buildings	209	270	270	270	270	270
Public Lighting	86	79	76	78	80	82
Vehicle Fleet	327	205	205	205	205	205
Transit Fleet	57	183	183	183	183	183
Employee Commute	85	85	85	85	85	85
Government Generated Waste	57	41	41	41	41	41
Water Delivery	1	1	1	1	1	1
<b>Total BAU</b>	<b>821</b>	<b>864</b>	<b>861</b>	<b>863</b>	<b>865</b>	<b>867</b>



# Greenhouse Gas Emissions Inventory

## PROJECTIONS, CONT'D.

The State of California has been proactive in reducing GHG emissions, exemplified by the state legislature’s passage of several regulations that affect vehicle standards, building standards, and the renewable energy content of electricity, which will serve to reduce GHG emissions at the local level.<sup>1</sup> As of 2011, Clean Air Fuel Standards (**Assembly Bill 1493**) require car manufacturers to reduce GHG emissions in new passenger cars and light trucks, which is projected to decrease Lafayette’s transportation emissions by 46,135 MTCO<sub>2</sub>e by 2020. Low Carbon Fuel Standards require 10% or greater reduction in the carbon intensity of California’s transportation fuels by 2020, which is estimated to decrease Lafayette’s transportation emissions by 17,633 MTCO<sub>2</sub>e by 2020.<sup>2</sup> **Community Choice Aggregations (“CCAs”)** such as Marin Clean Energy (MCE Clean Energy), approved by the State in 2002 through **AB117**, afford communities including the City of Lafayette to reduce GHG emissions at levels below investor-owned utility standards with the baseline service beginning at 53% renewably-sourced electricity.<sup>3</sup>

**AB32** recommends that local governments adopt a GHG reduction target of 15% below baseline levels by 2020.<sup>4</sup> Additionally, **Executive Order S-3-05**, created a goal to reduce GHG emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050.<sup>5</sup> More recently, Executive **Order B-30-15** aims to reduce emissions 40% below 1990 levels by 2030. The City needs to facilitate a reduction in emissions of 61,740 MTCO<sub>2</sub>e at minimum to meet its 15% below baseline emissions target by 2020.<sup>6</sup>

When the business-as-usual forecast and state reduction legislation are accounted for, Lafayette’s emissions are projected to be 266,046 MTCO<sub>2</sub>e or 19.5% below baseline emissions. If these state reductions and population growth projections are accurate, the City will meet its reduction goal by 2020 based on State regulations alone.

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## SOLID WASTE

### Introduction:

The aim of the solid waste section is to reduce GHG emissions caused by solid waste. Solid waste deposited in landfills emits methane, a GHG that is 21 times more potent than carbon dioxide.<sup>7</sup> Landfills are the third largest source of methane emissions in the United States.<sup>8</sup> Approximately 64-percent of California’s solid waste disposal is from commercial sources, including restaurants, retail, professional services, construction, and demolition activities.<sup>9</sup> Diverting commercial waste from the landfill is vital to reducing GHG emissions caused by solid waste. Aside from managing commercial waste, GHG emissions can be reduced through lowering residential consumption and altering waste disposal patterns. Recycling, reusing, and reducing residential consumption serves to keep waste out of landfills, reduces demand on virgin sources of materials, and decreases associated GHG emissions. Solid waste emissions in the community sector decreased 27-percent from 8,892 MT CO<sub>2</sub>e to 2,402 MT CO<sub>2</sub>e from 2005 to 2015. Solid waste emissions for the municipal sector decreased from 58.89 MTCO<sub>2</sub>e to 41.85 MTCO<sub>2</sub>e, a 29 percent reduction between 2005 and 2010.

### Solid Waste Standards:

#### State Standards

The **California Integrated Waste Management Act of 1989 (AB 939)** requires all California cities to divert 50-percent of all solid waste from landfill disposal through source reduction, recycling, and composting activities.<sup>10</sup> Efforts were furthered by legislation in 2011 (**AB 341**) which enacted a policy goal that at least 75-percent of solid waste generated in California should be reduced, recycled, or composted by 2020.<sup>11</sup> Additionally, per the **California Green Building Standards Code (CALGreen)**, “covered” construction and demolition projects must divert 65-percent of all construction and demolition debris from the landfill.<sup>12</sup> As of 2011, California only has enough landfill space for the next 25-years, and these standards are intended to guarantee available landfill space until the 2080’s.<sup>13</sup> These state standards were established assuming the rate of waste generated per person per day (between 1990 and 2010) is calculated at an average of 10.7 lbs. per day. To meet the 75-percent state-wide goal, by 2020, residents will be permitted to dispose of no more than 2.7 lbs. of waste per person per day.

#### City Standards

In 2011, the Lafayette City Council voted to exceed the **AB 939** standard by adopting the goal of achieving a 75-percent waste diversion rate as part of the Environmental Strategy.<sup>14</sup> In 2005, Lafayette achieved 49-percent waste diversion. In 2008, after becoming a state-recognized “Regional Agency,” RecycleSmart (CCCSWA) stopped annual reporting for individual agencies and instead is required to meet the AB939 mandate regionally. Regionally, CCCSWA reported a 60-percent waste diversion rate in 2010, and a 61-percent regional diversion rate in 2015.

# Resource Conservation

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### SOLID WASTE

#### Existing Actions:

The City of Lafayette currently surpasses the state diversion goal by approximately 8-percent, having diverted 58-percent of waste from landfills in 2014.<sup>5</sup>

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Community	Municipal
Require covered construction & demolition projects to divert a minimum of 65-percent of all construction waste and debris from the landfill.	Provide recycling receptacles in each staff members' offices, as well as recycling and green waste receptacles at all City-owned buildings.
Participate in curbside recycling, residential green waste, and residential food waste collection.	Incorporated a Green Purchasing Policy provision as part of the City's Municipal Purchasing Policy within the Administrative Rules & Regulations.
Partner with Recycle Smart, formerly known as the Central Contra Costa Solid Waste Authority ("CCCSWA") in the following programs: Food Recycling Program: 68 restaurants and food stores participate Composting Workshops at Lafayette Community Garden & Outdoor Learning Center, Mt. Diablo Nursery, & Orchard Nursery Special Reuse & Cleanup days.	Provide food waste collection bins in break rooms.
Provide commercial recycling outreach & services to all businesses.	Use Color Cube printers that generate no waste for the landfill based on use of wax, rather than traditional ink cartridges.
Provide commercial organics collection (yard waste, food waste, wood, & low-grade paper) to businesses as required by AB1826.	Provide recycling bins in the downtown.
Adopted regulations for single-use carry out bags and food packaging recycling.	Grind wood waste by Public Works Department to use for mulch/soil amendment.
Partnered with Sustainable Lafayette to promote Recycle Lafayette – a city-wide campaign to reach the 75% source reduction, recycling, and compost rate through outreach to residents, schools, & the business community.	Donate/sell excess or obsolete equipment or supplies.
Worked with the Chamber of Commerce's Green Committee to provide outreach to the business community about commercial recycling.	
Conducted trash audits at elementary and middle schools.	
Eliminated school-provided disposable lunch trays and water bottles at elementary schools.	
Educated public about consignment and reuse stores and collection opportunities within the community.	

<sup>5</sup> RecycleLafayette.org

# Resource Conservation

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### SOLID WASTE

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<b>SW—Goal 1</b>	<b><u>Community Waste Reduction, Recycling, &amp; Composting</u> – Increase community waste reduction, recycling, and composting to 75-percent of yearly solid waste generation by 2025.</b>		
Program 1.1	Work with CCCSWA and Republic Services to increase the participation rate for the food waste collection program for all single-family residences, multi-family residences, eating and drinking establishments, & markets.	Planning Department, CCCSWA, & Republic Services	\$\$\$
Program 1.2	Work with Republic Services to improve the waste collection system in the downtown.	Public Works Department	\$
Program 1.3	Encourage the Lafayette Chamber of Commerce to develop a policy requiring recycling and composting at all public events.	Planning Department & Lafayette Chamber of Commerce	\$
Program 1.4	Develop standards to ensure new and remodeled buildings are designed to include appropriate space for recycling, composting, and green waste facilities.	Planning Department, Environmental Task Force, & Lafayette Chamber of Commerce	\$\$
Program 1.5	Draft a policy to require businesses that sell hazardous materials to provide on-site disposal options for consumers.	Planning Department, Environmental Task Force, & Lafayette Chamber of Commerce	\$\$\$
<b>SW—Goal 2</b>	<b><u>Municipal Waste Reduction, Recycling, &amp; Composting</u> – Reduce the daily average disposal rate by 25-percent by 2025.</b>		
Program 2.1	Expand the City’s Green Municipal Purchasing Policy to reduce the purchase of disposable items, such as bottled water, wherever practical.	Administrative Services Department	\$
Program 2.2	Develop a paperless records management program for the City, including an electronic timecard management system.	Administrative Services Department	\$\$\$\$
<b>SW—Goal 3</b>	<b><u>Public Outreach &amp; Education</u> – Provide the community with further waste reduction education.</b>		
Program 3.1	Partner with the Chamber of Commerce, Sustainable Lafayette, and other associations to conduct expanded marketing and outreach to local business owners on ways to reduce waste.	Planning Department, Environmental Task Force, Lafayette Chamber of Commerce, & Sustainable Lafayette	\$\$
Program 3.2	Partner with StopWaste.org and CCCSWA, which provide waste analysis, consulting services for waste reduction, and waste audits for local businesses and residents.	Planning Department & Sustainable Lafayette	\$
Program 3.3	Encourage Sustainable Lafayette to promote resources to unsubscribe from unsolicited mailing lists.	Sustainable Lafayette	\$

#### Indicators:

- Daily average disposal rate per capita (in pounds).
- Annual disposal rate of City agencies and departments.
- Annual diversion rate through the City’s construction and demolition debris program.

# Resource Conservation

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*The intent of the water use section is to promote water conservation and to improve wastewater and stormwater management. Water pollution from stormwater runoff and improper disposal of waste may contaminate fish, recreation areas, and drinking water.<sup>15</sup> Water use also causes increases in GHG emissions as it is a carbon-intensive resource that requires a significant amount of energy to pump, treat, distribute, and heat.<sup>16</sup> Water-related energy use constitutes approximately 20-percent of California’s electricity use,<sup>17</sup> however water use accounts for less than 1-percent of Lafayette’s municipal GHG emissions, and wastewater accounts for less than 1-percent of community and municipal GHG emissions.*

The average Californian uses about 140 gallons of water per day for drinking, bathing, washing clothes, watering gardens, and other household uses.<sup>18</sup> However, on a per-capita basis, the water footprint of the average Californian is actually 1,500 gallons per day, based on the water required to produce the food we eat, the clothes we wear, the beverages we drink, and the other industrial goods on which we rely. By comparison, the average Californian’s water footprint is slightly less than the average American but considerably more than the average resident in other developed countries or the world. More than 90% of California’s water footprint is associated with agricultural products. Meat and dairy products have especially large water footprints due to the amount of water-intensive feed required to raise the animals. An additional 4% of California’s water footprint is associated with direct household water consumption (e.g., for landscape irrigation), and the remaining 3% is associated with other industrial products we consume, such as clothing and electronics.<sup>19</sup>

The City of Lafayette’s water supply is provided by the **East Bay Municipal Utility District (EBMUD)** and the City’s wastewater is collected and treated by the **Central Contra Costa Sanitary District (CCCSD)**. Water conservation is vitally important to every facet of life. Mountain snowpack, water stored in reservoirs, and water pumped from underground aquifers are the three main water sources that sustain California. EBMUD’s water supply is predominantly from the Sierra Nevada snowpack and rainfall stored in the Mokelumne River watershed.<sup>20</sup>

There have been multiple consecutive dry years in California, resulting in a number of water shortages. After experiencing the driest year in recorded state history, in January 2014 Governor Brown proclaimed a **State of Emergency** due to drought conditions and directed state officials to take all necessary actions to make water immediately available.<sup>21</sup> The state of emergency ended in April 2017, with the exception of four counties;<sup>22</sup> however, water conservation and the protection of EBMUD’s water supply is of high importance to the City of Lafayette. Reducing water usage can be accomplished through effective stormwater and wastewater management as well as through capturing, treating, and repurposing local stormwater and wastewater. This recycled water can be used for many things, including irrigation, toilets, and fighting fires.

# Resource Conservation

## INTRODUCTION

### Water Standards:

#### State Standards:

Given the lengthy state of emergency drought there are many statewide regulations that aim to make water conservation integral to the California lifestyle.

## GHG EMISSIONS INVENTORY

## RESOURCE CONSERVATION

On April 1, 2015, Governor Brown issued **Executive Order B-29-15** which aims to achieve a statewide 25-percent reduction in potable urban water usage (when compared to 2013 numbers) through February 28, 2016.<sup>23</sup> The state also adopted the California Green Building Standards Code (**CALGreen**) in 2011, which includes minimum requirements in the area of water conservation. CALGreen water efficiency and conservation standards require new construction to reduce use of potable water by 20-percent during and after building construction activities.<sup>24</sup>

## Solid Waste

In addition, the State released its most recent update to the **California Water Action Plan** in 2016 which includes broad policy goals and general actions to help state efforts on water conservation and use.<sup>25</sup> Some of the broad policies include rebates to homeowners willing to replace lawns for more drought-tolerant landscapes and replace toilets with more efficient flushes of 1.28 or less gallons per flush.<sup>26</sup>

## Water

The **Department of Water Resources (DWR)** is also overseeing an ongoing update to the California Water Plan to be finalized in 2018. Through the plan, the State will for the first time "identify specific outcomes and metrics to track performance, prioritize near-term State actions and investments, recommend financing methods having more stable revenues, and inform water deliberations and decisions as they unfold."<sup>27</sup>

## Energy Use

Executive Order B-29-15 also directed DWR to update the State's **Model Water Efficient Landscape Ordinance (MWELO)** through expedited regulation.<sup>28</sup> Approved on July 15, 2015, significant changes to the regulation include more efficient irrigation systems, incentives for graywater usage, improvements in stormwater capture, limiting the portion of landscapes that can be planted with high water use plants, and reporting requirements as to the implementation and enforcement of the ordinance. Local agencies have until December 1, 2015 to adopt the MWELO or to adopt a Local Ordinance which must be at least as effective in conserving water as MWELO.<sup>29</sup>

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#### Local Standards:

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EBMUD has adopted a **Water Supply Management Program 2040 Plan (WSMP 2040)** that aims to meet water needs through the year 2040 through aggressive conservation and water recycling, while also factoring in the potential global and regional effects of climate change on the reliability of water supply to the EBMUD service area. The WSMP 2040 portfolio includes rationing the water supply by 15-percent, conserving 39 million gallons of water per day, and recycling 11 million gallons of water per day. Multiple recycled water projects, including Reliez Valley Recycled Water Project for landscape irrigation, are permitted by the **San Francisco Regional Water Quality Control Board under General Order 96-011.**<sup>30</sup>

## RESOURCE CONSERVATION

### Solid Waste

In 2014 EBMUD enacted a **Water Shortage Emergency Action Plan**, enacting and revising Section 28 of its Regulations Governing Water Use. Section 28 places limits on outdoor potable water use; customers are required to limit watering of outdoor landscapes to two times per week, use a hose with a shutoff valve for handwashing motor vehicles, use a broom or air blower (rather than water) to clean driveways and sidewalks, and turn off fountains and decorative water features unless the water is recirculated. EBMUD also issued two new ordinances restricting water waste: an excessive use penalty and a water theft ordinance.<sup>31</sup>

### Water

In 2015, EBMUD's Board adopted a 20% mandatory water use reduction goal. This goal was set not only to comply with the Governor's order, but also to conserve water in keeping with the Drought Management Program Guidelines.

### Energy Use

## WATER

### Green Construction

### Existing Actions:

## COMMUNITY HEALTH

Community	Municipal
Development projects are required to provide for a storm drainage system, to keep impermeable surfaces to a minimum, to include detention basins or ground water recharge facilities where appropriate, and to incorporate drought tolerant plants where appropriate.	Public Works crew reads and evaluates meters for landscape irrigation systems on a weekly basis to determine if there are leaks.
Customers applying for water service with EBMUD must provide self-certification of compliance with EBMUD's Water Efficiency checklist.	EBMUD provides bi-monthly water budget updates to the Public Works Department.
Development projects that affect over 500 sq. ft. of impervious surfaces must have their drainage reviewed by the City Engineer to ensure that the stormwater is being handled responsibly.	
Development projects that hit the Contra Costa Clean Water Program Stormwater C.3 threshold must comply with the C.3 requirements to manage and prevent stormwater pollution through a variety of stormwater controls.	Installed drip irrigation systems at a majority of the Public Works'-maintained landscape areas in the City.
Participate in Rising Sun Energy Services' California Youth Energy Services program, in which local youth energy specialists install water savings devices resulting in significant annual water savings.	

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### Goals & Programs:

<b>INTRODUCTION</b>	<b>W—Goal 1</b> <b><u>Community Water Conservation</u> – Decrease water usage by 30-percent per capita by 2025.</b>		
<b>GHG EMISSIONS INVENTORY</b>	Program 1.1	Adopt water efficient landscape requirements for projects that trigger discretionary review that include: Incorporating native and drought tolerant vegetation Minimizing irrigated lawn areas Designing irrigation systems to avoid runoff and overspray.	Planning Department & Environmental Task Force \$\$\$\$\$
<b>RESOURCE CONSERVATION</b>	Program 1.2	Explore the feasibility of requiring all existing multi-unit buildings to be “sub-metered” to enable monitoring water consumption on a unit-by-unit basis.	Planning Department & EB-MUD \$\$\$
Solid Waste	Program 1.3	Encourage innovative strategies to decrease potable water consumption, such as installing a recycled water pipeline or establishing a recycled water facility in Lafayette. This may include the use of rainwater-harvesting systems and recycled and gray water for various purposes including irrigation.	Planning Department & Engineering Department \$\$\$\$\$
<b>Water</b>	Program 1.4	Streamline permit process for installing gray water facilities.	Planning Department & Engineering Department \$\$
Energy Use	<b>W—Goal 2</b> <b><u>Municipal Water Conservation</u> – Decrease water usage by 30-percent per capita by 2025.</b>		
Green Construction	Program 2.1	Continue to implement water-conscious policies and practices for municipal operations throughout the downtown, in parks, and City-owned properties. These may include: Installing water efficient landscapes and irrigation systems when new features are required Upgrading or installing water-conserving fixtures (e.g., faucets, high-efficiency toilets, etc.) Using recycled water as available, if recycled water is sourced from Lafayette, given the constraints involved with transporting water.	Public Works Department & Parks, Trails, & Recreation Department \$
<b>COMMUNITY HEALTH</b>	<b>W—Goal 3</b> <b><u>Public Outreach &amp; Education</u> – Provide the community with further information regarding water conservation and management.</b>		
Food & Agriculture	Program 3.1	Develop online resources and outreach materials for water conservation tips, planting guides, available rebates for water-saving equipment, and ways to minimize water pollution.	Planning Department & Environmental Task Force \$\$
Green Business	Program 3.2	Promote the following programs, tools, incentives, and water conservation information for the community: East Bay Municipal Utility District’s WaterSmart Center StopWaste.org’s Bay Friendly Landscaping Program Rising Sun Energy Center’s California Youth Energy Services EPA’s WaterSense Program.	Planning Department & Sustainable Lafayette \$
<b>TRANSPORTATION</b>			
<b>OPEN SPACE, PARKS, &amp; LANDSCAPE</b>			

### Indicators:

- Amount of water consumed in gallons.
- Amount of water consumed in gallons on municipal properties.
- Number of rainwater-harvesting systems installed.



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## ENERGY USE

### Introduction:

*The intent of this section is to promote reduction of GHG emissions caused by energy use through energy conservation and efficiency and the use of renewable energy sources.* Energy-related emissions account for more than 80-percent of the carbon dioxide released into the atmosphere each year.<sup>32</sup> These emissions can be reduced through using less energy, increasing the efficiency of energy sources, and using renewables. Fossil fuels are currently used to satisfy nearly 80-percent of the world's primary energy needs, thus finding ways to diversify energy sources is important for securing a more sustainable future for energy.<sup>33</sup> Currently, among the many renewable options, solar photovoltaic generates 54 percent of California's renewable energy generation. The energy generation from new **solar photovoltaic** in California is forecasted to increase greatly in the next couple of years and contribute to 32-percent of the renewable resource mix by 2020.<sup>34, 35</sup>

In 2002, **AB117** was passed, authorizing the creation of Community Choice Aggregators to generate and obtain electricity from renewable sources and provide it to customers via PG&E's infrastructure.<sup>36</sup> As of September 2016, the electricity used in Lafayette's homes and businesses is generated by MCE Clean Energy and transmitted by Pacific Gas and Electric Company (PG&E). All electricity customers within the City are automatically enrolled in **MCE's "light green"** 53-percent renewable service, but have the option to opt-up to "deep green," the 100-percent renewable service, or opt-out to PG&E. MCE generates electricity from a mix of conventional non-renewable resources (25%) and renewable sources including hydroelectric, geothermal, wind, solar, and biomass (75%).<sup>24</sup> MCE's goal is to achieve a 100-percent GHG-free supply portfolio by 2025.<sup>37</sup>

The amount of energy used to power homes and businesses determines how much power MCE needs to generate and the quantity of GHGs emitted.<sup>38</sup> Most of the residential buildings in Lafayette were constructed between 1950 and 1959, with approximately 89-percent of all housing built before 1979. Since most homes in Lafayette were built prior to **Title 24 Standards**, Lafayette has a considerable opportunity to impact this market for energy improvements and emission savings. In addition to energy retrofits and improvements, increasing locally-generated electricity would lead to further reductions in GHG emissions. High upfront costs have often been a barrier to renewable energy installations, so many of the programs in this section seek to ease this financial burden.<sup>39</sup> Municipal energy usage for Buildings and Facilities has fluctuated between 2005 and 2015. Energy use accounted for 209.45 MTCO<sub>2</sub>e, 269 MTCO<sub>2</sub>e, and 252.5 MTCO<sub>2</sub>e in 2005, 2010 and 2015 respectively. The following chart describes emissions associated with energy use for the residential and commercial/industrial use for both electricity and natural gas.

Sector	Source	2005	2010	2015	Percent Change from 2005	Percent Change from 2010	
Energy	Residential Energy	Electricity	18925	16718	14884.01451	-21%	-11%
		Natural Gas	35572	36559	30228.07835	-15%	-17%
	Commercial/Industrial Energy	Electricity	10489	10387	9824.035454	-6.3%	-5%
		Natural Gas	6829	7097	6950.591919	-2%	-2%

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### ENERGY USE

#### Energy Use Standards:

##### *State Standards*

In 1978, the California Energy Commission (CEC) adopted the **California Code of Regulations (CCR)**.<sup>40</sup> Title 24 of the CCR consists of regulations to enhance California building standards. **California's Renewable Portfolio Standard (RPS)** is one of the most ambitious renewable energy standards in the country, first codified in 2002 by **SB 1078**.<sup>41</sup> **The California Solar Initiative (CSI)** was authorized in 2006 by SB 1 and allows the CPUC to provide incentives to install solar technology on existing residential, commercial, nonprofit, and governmental buildings if they are customers of the State's investor-owned utilities, such as PG&E.<sup>42</sup> In 2007, the California Governor directed state agencies to develop green building standards for residential, commercial, and public building construction for the 2010 code adoption process. This effort resulted in establishing **Title 24 Part 11**, also referred to as **CalGreen**, which was voluntary in 2008 and mandatory starting in 2011.<sup>43</sup> In 2009, **AB 758** was passed that requires the California Energy Commission to develop a comprehensive program to achieve greater energy efficiency in the state's existing buildings.<sup>44</sup> In 2010 (updated in 2011), **Title 24 Part 6** was created that includes requirements for lighting, insulation, and equipment upgrades to buildings undergoing additions, alteration, or repairs. In 2011, California's RPS was updated and mandates that 33-percent of electricity delivered in California is generated by renewable sources like solar, wind, and geothermal by 2020. In the second quarter of 2013, the California Public Utilities Commission (CPUC) reported California is on track to meet 33-percent by 2020. Effective in 2014, the CEC requires all new residential buildings to have solar-ready roofs, and **AB 802** mandates that electric and gas utilities maintain records of the energy consumption data of all non-residential buildings to which they provide service, and mandates that an owner or operator of a non-residential building shall disclose **ENERGY STAR Portfolio Manager** benchmarking data and ratings for the most recent 12-month period to a prospective buyer, lessee, or lender and to the CEC.<sup>45</sup>

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## ENERGY USE

### Existing Actions:

Community	Municipal
Streamlined the solar permitting process to allow the installation of solar panels to be less expensive and less time consuming.	Retrofitted downtown streetlights by replacing 235 metal halide lights with induction fixtures and phasing downtown streetlights to LED's as the light bulbs burn out.
Partnered with EBEW and PG&E to promote services, rebates, and tax incentives for energy conservation and renewable energy.	Installed energy efficient upgrades to the Community Center including installing a cool roof, energy efficient windows, and upgrades to the lighting system.
Provided a number of energy savings programs that promote conservation and efficiency upgrades through PG&E and MCE.	Switched all City-owned electricity accounts in to MCE Clean Energy's 100-percent option, "Deep Green."
Installed energy efficient upgrades, such as installing motion sensors and replacing the lights with low-voltage fluorescent fixtures, to the gymnasiums at the four public elementary schools and the public middle school, resulting in ~\$30,000 annuity.	
Authorized participation in five Property Assessed Clean Energy (PACE) Financing Programs – CaliforniaFIRST, California Statewide Communities Development Authority Open PACE Platform, Figtree Financing, the HERO Program, and YGreene.	
Partnered with City of Walnut Creek, Vote Solar Initiative, and the Business Council on Climate Change for the SunShares renewable energy procurement program in 2015, 2016, and 2017.	
Participated in Rising Sun Energy Services' California Youth Energy Services program, where local youth energy specialists install energy-savings devices in residences.	
Joined MCE Clean Energy, automatically enrolling all electricity accounts in to the "light green" 50-percent renewable service, as an alternative to PG&E.	

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#### Goals & Programs:

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	<b>EU—Goal 1</b>	<b>Community Energy Use – Reduce community energy use from 2015 by 5-percent by 2020, 10-percent by 2025, and 15-percent by 2030 and transition to 75% renewable energy by 2025.</b>		
	Program 1.1	Promote energy audits for existing residential and commercial development.	Planning Department	\$
	Program 1.2	Encourage property owners to monitor building energy use through energy monitors, web applications, and State-required energy use disclosures.	Planning Department & Sustainable Lafayette	\$
Solid Waste	Program 1.3	Develop regulations that require new construction, large additions, and major remodels to adhere to additional energy efficiency performance standards, such as exceeding Title 24 requirements by 10-percent.	Planning Department & Environmental Task Force	\$\$\$\$
Water	Program 1.4	Review and update wind energy conversion system regulations.	Planning Department & Environmental Task Force	\$\$\$\$
	Program 1.5	Encourage Sustainable Lafayette to work with the School District Green Team to identify saving opportunities and energy needs for Lafayette schools.	Environmental Task Force & Sustainable Lafayette	\$
Energy Use	Program 1.6	Encourage residents to apply for matching incentive funding through the Comprehensive Residential Building Retrofit Program and other state programs.	Planning Department & Sustainable Lafayette	\$
Green Construction	Program 1.7	Encourage residents and business owners to switch to MCE Clean Energy’s 100-percent renewable electricity option, “Deep Green.” Encourage 4% of residents to opt-up by December 2018, 6% by December 2019, 8% by December 2020, and 10% by December 2021.	Planning Department, Environmental Task Force, & Sustainable Lafayette	\$\$
	<b>EU—Goal 2</b>	<b>Municipal Energy Use – Reduce municipal energy use from 2015 levels by 5-percent by 2020, 10-percent by 2025, and 15-percent by 2030.</b>		
Food & Agriculture	Program 2.1	Expand the City’s Green Municipal Purchasing Policy to ensure that equipment, appliances, and lighting are replaced with high-efficient models.	Administrative Services Department	\$
	Program 2.2	Benchmark and track all City-owned buildings and assess building performance on a semi-annual basis.	Administrative Services Department	\$\$
Green Business	Program 2.3	Identify sources of funding for energy upgrades, audits, and benchmarking.	Planning Department, Environmental Task Force, & Sustainable Lafayette	\$
TRANSPORTATION	Program 2.4	Develop at least one municipal renewable energy pilot project, such as installing a green roof, by 2025.	Planning Department	\$\$

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EU—Goal 3	Public Outreach & Education – Provide the community with further energy efficiency and reduction education.		
Program 3.1	Collaborate with local utility providers, the County and State, businesses, and community organizations to develop energy conservation campaigns and marketing for existing programs.	Planning Department	\$
Program 3.2	Maintain a list of funding sources for energy improvements.	Planning Department	\$
Program 3.3	Promote sources of funding and rebates for solar installations, such as U.S. Department of Energy SunShot Initiative.	Planning Department & Sustainable Lafayette	\$
Program 3.4	Promote the following programs and events for services, tools, incentives, and energy-efficiency information for the community: Rising Sun Energy Center’s California Youth Energy Services Lafayette Earth Day Festival Lamorinda Web Home Expo.	Planning Department & Sustainable Lafayette	\$

#### Indicators:

- Monthly average electrical consumption for municipal, residential, and commercial.
- Monthly average natural gas consumption for municipal, residential, and commercial.
- kW generated by solar installations.

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### GREEN CONSTRUCTION

#### **Introduction:**

*Green construction refers to a sustainable, resource-efficient, and environmentally responsible process of building or remodeling a structure. It includes siting, design, construction, operation, maintenance, renovation, and demolition of a structure. Green buildings re-use existing materials; conserve water; reduce the need for artificial lighting, heating, cooling, and ventilation; and provide optimal air quality for building occupants.<sup>46</sup> In addition to using green construction techniques for building, there are basic building efficiency upgrades that can be done to improve building performance, especially in older buildings.*

There are multiple non-profit organizations that support green construction, including the U.S Green Building Council through their **Leadership in Energy and Environmental Design (“LEED”)** program, Build it Green’s **GreenPoint Rated (“GPR”)** program, and the International Living Future Institute’s **Living Building Challenge (“LBC”)** program. LEED is a green building tool that addresses the entire building lifecycle and provides third-party verification of green buildings. Building projects satisfy prerequisites and earn points to achieve different levels of certification. Points may be earned by using sustainable sites, water efficiency, energy and the atmosphere, materials and resources, indoor environmental quality, and innovation in design.<sup>47</sup> GreenPoint Rated is a program similar to LEED, although it focuses on residential projects in California. GPR verifies that a home has been built or remodeled according to proven green standards. The GPR program has certificates for whole homes and for elements of homes (e.g., remodeling a kitchen). GPR awards points for projects across different categories that include energy efficiency, resource conservation, indoor air quality, water conservation, and community.<sup>48</sup> The Living Building Challenge is a building certification program, advocacy tool, and philosophy that defines the most advanced measure of sustainability in the built environment possible today. The LBC is comprised of seven performance categories, called Petals (place, water, energy, health and happiness, materials, equity, and beauty); Petals are subdivided into a total of twenty imperatives, each of which focuses on a specific sphere of influence. The LBC offers a Living Certification for buildings, renovations, and landscape and infrastructure projects when all twenty imperatives are met; a Petal Certification when at least seven imperatives are met; and a **Net Zero Energy Certification** when 100-percent of the building’s energy needs on a net annual basis are supplied by on-site renewable energy. The LBC certifications are based on actual performance, rather than modeled outcomes. The LEED, GPR, and LBC programs exceed Title 24 standards.

#### **Green Construction Standards:**

The City contracts with the Contra Costa County Building Inspection Department, which enforces the State’s standards for green construction (Title 24). The Title 24 regulations are updated every three years and further discussed in the Energy Use section of this document.

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Community	Municipal
Prior to mandatory green building guidelines, the Contra Costa County Building Inspection Department adopted a set of optional green building guidelines encouraging the use of green building materials and techniques.	Installed solar panels over the carport at the Lafayette Library & Learning Center.
Adopted Downtown Design Guidelines (DDGs), which include green construction guidelines such as using durable and renewable materials, incorporating green roofs, and designing buildings to be adaptable for multiple uses.	Sustainable approach to construction of the Lafayette Community Center’s Manzanita Room, including: <ul style="list-style-type: none"> <li>• Ample roof surface with southern exposure for future solar panels,</li> <li>• Existing electrical circuit in parking lot that could be modified to accommodate charging stations,</li> <li>• 50% of the construction and demolition debris was diverted from the landfill through recycling and reuse,</li> <li>• Used insulated metal panels composed of 70% recycled steel,</li> <li>• Designed the building shell to reduce energy demands due to insulation and waterproofing, and</li> <li>• Use of LED-lighting, an energy-efficient heat pump system, and low-flow plumbing fixtures.</li> </ul>
Adopted Property Assessed Clean Energy financing programs to enable efficient building upgrades.	
Grant annual Awards of Environmental Excellence.	
Contract with the Contra Costa County Building Inspection Department to ensure all state requirements are met.	

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<b>GC—Goal 1</b>	<b><u>Community Green Construction</u> – Increase number of certified green buildings on an ongoing basis.</b>		
Program 1.1	Develop incentives to encourage developers and property owners to exceed minimum CalGreen requirements, such as obtaining LEED certification, GPR certification, or a self-certification equivalent.	Planning Department & Environmental Task Force	\$\$\$\$
Program 1.2	Encourage the use of regional materials to decrease GHG emissions associated with transporting materials from elsewhere.	Planning Department & Lafayette Chamber of Commerce	\$
Program 1.3	Require applicants to complete a Build It Green Checklist or a similar already established checklist for discretionary development projects.	Planning Department	\$
Program 1.4	Promote local and state-wide programs to improve building efficiency in existing buildings that include CalSPREE programs, Savings by Design, Energy Star, etc.	Planning Department	\$
Program 1.5	Continue to pursue partnerships with organizations, such as QuEST, for technical assistance to calculate greenhouse gas emissions associated with buildings and facilities throughout the community.	Planning Department	\$\$
<b>GC—Goal 2</b>	<b><u>Municipal Green Construction</u> – Obtain green building certification for a minimum of one additional municipally-owned building by 2030.</b>		
Program 2.1	Pursue green building initiatives for new City Offices.	Administrative Services Department	\$\$
Program 2.2	Pursue grants and other forms of outside funding for municipal green construction upgrades.	Planning Department	\$\$
<b>GC—Goal 3</b>	<b><u>Public Outreach &amp; Education</u> – Provide the community with further green construction education.</b>		
Program 3.1	Promote available financial incentives and low-cost financing tools to enable increased green building in the private sector.	Planning Department	\$
Program 3.2	Develop materials to promote green construction on the City’s website, at the Planning Counter, and at the Lafayette Chamber of Commerce.	Planning Department	\$

#### Indicators:

- Inventory of buildings with LEED certification.
- Inventory of buildings with GPR certification.
- Inventory of Municipal buildings with any green building certification.



# Community Health

## FOOD & AGRICULTURE

### INTRODUCTION

#### Introduction:

Food production is recognized as one of the nation’s largest sources of environmental degradation. Approximately one-third of all GHG emissions result from the global food system due to importation, soil degradation, and deforestation. According to the **Food and Agriculture Organization**, the main global sources of emissions are: “feed production and processing (45 percent of the total), outputs of GHG during digestion by cows (39 percent), and manure decomposition (10 percent). The remainder is attributable to the processing and transportation of animal products.”<sup>49</sup> The most effective approaches to curbing GHG emissions associated with food are reducing the consumption of carbon-intensive foods, including dairy products and red meat, and increasing the availability of fresh, locally-sourced, organic produce.

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#### Food & Agriculture Standards:

##### Federal Standards

The United States **Food and Drug Administration** (FDA) regulate food safety programs, manufacturing processes, industry systems, and import/export activities. The FDA regulates \$417 billion worth of domestic food and \$49 billion worth of imported food each year—everything we eat except for meat, poultry, and some egg products, which are regulated by the U.S. Department of Agriculture.

Water

##### State Standards

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The **California Department of Food and Agriculture** (CDFA) is divided into seven divisions and carries out state food safety and regulation of policy. Their mission is to help the Governor and Legislature ensure delivery of safe food and fiber through responsible environmental stewardship in fair marketplace for all Californians. The CDFA wants to guarantee that only safe and quality food reaches the consumer and ensure an equitable marketplace for agricultural products. The CDFA inspects fruits, vegetables, and nuts to ensure maturity, grade, size, weight, and packaging. The department performs verification audits to ensure safe handling and agricultural practices and conducts pest prevention and management programs to protect California horticulture, agriculture, and natural resources.

Green Construction

##### Local Standards

## COMMUNITY HEALTH

The **Contra Costa County Environmental Health Department** is responsible for regulating restaurants, certified farmer’s markets, farm stands, mobile food facilities, permanent food facilities, and temporary food facilities. Additionally, the City regulates crop and tree farming, livestock, small farming, horticulture, viticulture, and agriculture in all zoning districts.

## Food & Agriculture

#### Existing Actions:

Community	Municipal
Established Urban Farmers, a grassroots, all-volunteer, non-profit organization which grows and gleans fresh fruit harvested locally.	Leased land from EBMUD to provide the Lafayette Community Garden (Lafayette Community Garden has a contract with Sustainable Lafayette which has a contract with the City which has a contract with EBMUD).
Established the Lafayette Community Garden in collaboration with Sustainable Lafayette to grow food collaboratively, facilitate workshops to promote sustainable gardening, and share food.	Developed policy to avoid use of chemicals that are discouraged by CA Regional Water Quality Control Board, encourage integrated pest management practices, and perform weed abatement by hand when economically viable.
Created edible gardens at local schools.	
Provided workshops on raising chickens and rabbits.	Minimize the use of hazardous or toxic materials, such as persistent organic pollutants (POPs) and persistent bio-accumulative & toxic chemicals (PBTs), by residents, businesses, and City operations.
Passed regulations to allow and define the number of food-producing animals that can be kept by residents.	Using mulch as a weed-mitigation measure in order to decrease the use of chemical mitigation measures.

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<b>FA—Goal 1</b>	<b>Community – Increase availability of fresh, locally produced, organic produce.</b>		
Program 1.1	Encourage Sustainable Lafayette to work with Global Student Embassy to establish gardens and associated programming at all Lafayette schools.	Planning Department & Sustainable Lafayette	\$
Program 1.2	Encourage Sustainable Lafayette to create a campaign to increase participation with the Lafayette Community Garden, the Global Student Embassy, the Urban Farmers, and other similar organizations.	Planning Department, Sustainable Lafayette, & Lafayette Community Garden	\$
<b>FA—Goal 2</b>	<b>Municipal – Increase availability of fresh, locally produced, organic produce to promote community health and to minimize resource consumption.</b>		
Program 2.1	Expand community gardens on City-owned properties, such as the Lafayette Community Center or Community Park.	Parks, Trails, & Recreation Department	\$\$\$
Program 2.2	Establish a policy in the Administrative Regulations that requires the City to supply, when possible, local food from Lafayette businesses when food is provided at meetings and events.	Administrative Services Department	\$
Program 2.3	Encourage Sustainable Lafayette to assist local businesses with becoming certified Fair Trade USA.	Planning Department & Sustainable Lafayette	\$
<b>FA—Goal 3</b>	<b>Public Outreach &amp; Education – Provide the community with further education on the local food movement.</b>		
Program 3.1	Promote Lafayette Community Garden, the Urban Farmers, and other similar organizations and their events on the City’s website.	Planning Department	\$
Program 3.2	Encourage Sustainable Lafayette to educate local gardeners in resource efficient and pollution prevention landscape management practices. Use the Green Gardener Certification Program in Redwood City as a guide.	Planning Department & Sustainable Lafayette	\$
Program 3.3	Encourage Sustainable Lafayette and the Lafayette Chamber of Commerce to develop an “As Fresh As It Gets” campaign to support and encourage the consumption of fresh, locally produced, organic products.	Planning Department, Sustainable Lafayette, & Lafayette Chamber of Commerce	\$

#### Indicators:

- Number of schools with gardens and associated programming.
- Number of Lafayette Community Garden members and visitors.
- Number of residents participating in food sharing, community supported agriculture, or gleaning programs.
- Quantity and type of hazardous materials (including POP & PBT-containing materials) purchased by the City.

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**GREEN BUSINESS**

**Introduction:**

The **Green Business Program**, a partnership of the Lafayette Chamber of Commerce, City of Lafayette, Contra Costa County, and the Association of Bay Area Governments, is designed to assist, recognize, and promote local businesses that volunteer to operate in a more environmentally responsible way. To be certified “green,” businesses must be in compliance with all state and local regulations and meet the program’s standards for energy and water conservation, pollution prevention, and waste diversion from the landfill.<sup>50</sup>

**Green Business Standards:**

There are no federal, state, or city standards for green businesses, but there are a number of guidelines and certification programs such as those offered by the U.S. Small Business Administration, the Bay Area Green Business program, and the Lafayette Green Business program operated by the Lafayette Chamber of Commerce. Certified Green Businesses exhibit a tangible commitment to reducing waste and conserving resources, serving as a great example to other local businesses. There are currently three green business programs—Lafayette Green Business, the Bay Area Green Business Program, and the California Green Business Program—which are administered by the Lafayette Chamber of Commerce, Contra Costa County, and the State of California respectively.

**Existing Actions:**

Community	Municipal
Prepared a Lafayette Green Shopper Guide, which outlines Lafayette Chamber of Commerce members that are certified Lafayette Green Businesses, Bay Area Certified Green Businesses, or sell “green” products or services.	Obtained certification of the Lafayette City Offices and the Lafayette Community Center as a Lafayette Green Business and Bay Area Certified Green Business.
Prepared a Lafayette Business Owners Green Brochure, that includes 15 tips to “green” your business.	
Partnered with a green business consulting firm to outline tips for “greening” your business.	Adopted Ordinance 626, regulating single-use carryout bags and food packaging recycling.
Prepare handout for reducing or eliminating junk mail.	

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<b>GB—Goal 1</b>	<b><u>Community</u> – Encourage and support Lafayette business adoption of sustainable (green) business practices that conserve energy and water, minimize waste, prevent pollution, and reduce the impacts of climate change.</b>		
Program 1.2	Develop a plastic straw ban for local businesses.	Planning Department, Environmental Task Force, Lafayette Chamber of Commerce, & Sustainable Lafayette	\$\$\$\$\$
<b>GB—Goal 2</b>	<b><u>Municipal</u> – Support Lafayette’s use of sustainable business practices through adoption of municipal code updates, ordinances, and guidelines that encourage and support participation.</b>		
Program 2.1	Certify all municipal buildings as Certified Lafayette Green Businesses and Bay Area Certified Green Businesses.	Administrative Services Department	\$\$
<b>GB—Goal 3</b>	<b><u>Public Outreach &amp; Education</u> –Provide the business community with information and assistance to encourage adoption of sustainable business practices.</b>		
Program 3.1	Encourage the Lafayette Chamber of Commerce and Sustainable Lafayette to assist businesses in obtaining a green business certification by partnering business owners with interns and organizations to supplement their efforts.	Planning Department, Lafayette Chamber of Commerce, & Sustainable Lafayette	\$
Program 3.2	Work with the Lafayette Chamber of Commerce and local agencies (EBMUD, MCE/PG&E, RecycleSmart, Contra Costa County, and neighboring jurisdictions) to develop new activities and programming that encourages the use of sustainable business practices.	Planning Department & Lafayette Chamber of Commerce	\$\$\$

**Indicators:**

- Number of businesses participating in the Lafayette Green Business Program.
- Number of businesses participating in the Bay Area Green Business Program.

# Transportation

INTRODUCTION	<p><a href="#"><u>TRANSPORTATION</u></a></p>
GHG EMISSIONS INVENTORY	<p><b>Introduction:</b>  <i>Transportation comprises nearly one-third of total U.S. emissions and close to 40-percent of California’s emissions.</i><sup>51</sup> Transportation-related emissions are linked to the travel mode (passenger vehicle, heavy equipment, bicycle, etc.), trip length, number of trips, efficiency of vehicles, and land use and development patterns.<sup>52</sup> Getting people to shift from single-occupancy vehicle trips to carpooling, transit, and active transportation trips, such as walking or biking, is crucial for reducing congestion and carbon emissions. Based on the GHG inventories for the City, emissions from local roads decreased significantly between 2005 and 2015, emissions from state highways increased slightly, and emissions from residential off-road equipment remained constant. Overall, the 2015 GHG inventory showed that 5% of all emissions came from off-road equipment, 17% from local roads, and 56% from the state highway.</p>
RESOURCE CONSERVATION	
Solid Waste	<p><b>Transportation Standards:</b>          It is statewide policy to encourage widespread electrification of the transportation sector. Numerous state laws, regulations and executive orders exist pertaining to the reduction of mobile and transportation-related GHG emissions.</p>
Water	
Energy Use	<p><u>Regulations &amp; Initiatives</u>          In December 2016, the <b>California Public Utilities Commission authorized PG&amp;E to spend \$130 million</b> to install up to 7,500 charging stations at multifamily residential dwellings and workplace locations throughout its service territory (Decision 16-12-065). This program covers the majority of the cost of charger installations at qualified facilities.<sup>53</sup></p>
Green Construction	<p>The <b>California Public Utilities Commission entered into a settlement agreement with NRG Energy Inc.</b> to bring to California a statewide network of charging stations for PEVs, including at least 200 public fast-charging stations and the infrastructure for up to 10,000 privately-owned charging stubs (make-readies) at multi-family residences, workplaces and other locations.<sup>54</sup></p>
COMMUNITY HEALTH	<p><b>Newly constructed residential and most non-residential buildings will be Plug-in Electric Vehicle (PEV)-capable as a matter of state law.</b> The California Building Standards Commission adopted changes to the California Green Building Standards Code (Title 24, Part 11 Green Building Standards Code) requiring all newly constructed parking lots and housing to put electrical capacity in place to easily install PEV chargers. Effective January 2017, the number of parking spaces that must be PEV-capable increases to 6% for most non-residential buildings.<sup>55</sup></p>
Food & Agriculture	<p>In January 2016, California adopted the <b>first PEV charging station accessibility requirements</b> in the nation, providing clear standards and guidance to ensure charging stations are accessible to ZEV users with disabilities.<sup>56</sup></p>
Green Business	<p>In April 2016, the California Department of Food and Agriculture entered into an interagency agreement with the California Energy Commission to develop <b>specifications and accuracy tolerances</b> for the commercial (non-utility) measurement of electricity as a motor vehicle fuel dispensed from PEV charging equipment.<sup>57</sup></p>
TRANSPORTATION	<p>In March 2013, the California Department of Transportation issued a directive <b>standardizing signage for public PEV charging stations</b> and hydrogen fueling stations on highways and roads across the state. The California Manual on Uniform Traffic Control Devices also now permits signage for alternative</p>
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# Transportation

INTRODUCTION	<p>The <b>California Energy Commission is working to complete the California segments of the West Coast Electric Highway</b>, funding networks of DC fast chargers along key interregional highway corridors. The California Energy Commission provided \$8.8 million for 61 DC fast chargers along north-south corridors for Interstate 5, U.S. Highway 101 and State Highway 99.<sup>59</sup> A second solicitation for \$9.9 million to support east-west highway corridors was released in January 2016. In September 2015, California signed a Letter of Intent with the New Energy and Industrial Technology Organization (NEDO) of Japan to support the installation of 30-50 DC fast chargers from Monterey to Lake Tahoe via Sacramento.<sup>60</sup></p>
GHG EMISSIONS INVENTORY	
RESOURCE CONSERVATION	<p>In partnership with the California Plug-In Electric Vehicle Collaborative, Governor Brown hosted two high-level convening's of CEOs (in 2013 and 2015) at the "Drive the Dream" event to encourage companies across California to commit to <b>expanding workplace charging</b>.<sup>61</sup></p>
Solid Waste	<p><u>Statutes &amp; Executive Orders</u>          In 2002, the State Legislature passed <b>AB 1493</b>, with the intent to reduce GHG emissions from passenger vehicles by regulating manufacturing standards related to fuel efficiency, beginning in 2009. As a result of this legislation, it anticipated that GHG emissions from California passenger vehicles will have decreased by approximately 30-percent in 2016.<sup>62</sup></p>
Water	
Energy Use	<p>In 2007, the State Legislature passed two bills pertinent to mobile GHG emissions reduction: <b>SB 97</b> and <b>AB 118</b>. SB 97 streamlines environmental review for projects under CEQA when the subject project contributes to emissions reductions goals set forth in a local GHG reduction strategy or plan. For example, a project that reduces single-vehicle occupancy demand by reducing on-site parking or providing additional active transportation facilities may qualify for CEQA exemption under SB 97. In addition, AB 118 established the Alternative and Renewable Fuel and Vehicle Technology Program to fund public projects that deploy alternative and renewable fuels, such as electric vehicle charging infrastructure.<sup>63,64</sup></p>
Green Construction	
COMMUNITY HEALTH	<p>In 2008, <b>SB 375</b> was passed as the <b>Sustainable Communities &amp; Climate Protection Act</b>, which mandates that the California Air Resources Board (ARB) develop GHG reduction targets specific to passenger vehicles. As such, Metropolitan Planning Organizations (MPOs) must each develop a Sustainable Community Strategy (SCS) that delineates passenger vehicle GHG reduction targets. For the San Francisco Bay Area MPO, known as the Metropolitan Transportation Commission (MTC), Plan Bay Area represents the regional SCS.<sup>65</sup></p>
Food & Agriculture	
Green Business	<p>In 2012, Governor Edmund Brown issued <b>Executive Order B-16-12</b> directing the state to accelerate the market for zero emissions vehicles in California. It orders State agencies to facilitate the rapid commercialization of zero-emission vehicles (ZEVs). The Executive Order sets a target for the number of 1.5 million ZEVs in California by 2025. Also the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels. In 2015, executive order B-30-15 set an interim milestone to reduce GHG emissions to 40% less than 1990 levels by 2030.<sup>66</sup></p>
TRANSPORTATION	<p>In 2013, the State Legislature re-authorized two programs that provide as much as \$100 million annually towards innovative transportation and fuel technologies, including PEV charging and hydrogen station infrastructure, through 2024: the <b>Air Quality Improvement Program (AQIP)</b>, administered by the California Air Resources Board, and the <b>Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)</b>, administered by the California Energy Commission.<sup>67,68</sup></p>
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# Transportation

## INTRODUCTION

In 2014, the State Legislature passed and Governor Brown signed the **California Charge Ahead Initiative (SB 1275)**, a landmark bill supporting consumer incentives and rebates to enable one million ZEVs on California’s roads by January 1, 2023.<sup>69</sup>The law requires the California Air Resources Board to adopt programs that benefit disadvantaged communities, including projects that provide grants for fleet managers to replace polluting medium- and heavy-duty vehicles with cleaner vehicles. Another 2014 law, SB 1204, established the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program to fund purchase incentives for commercially available heavy-duty zero and near zero-emission technologies.<sup>70</sup>

## GHG EMISSIONS INVENTORY

## RESOURCE CONSERVATION

In 2015, the State Legislature passed and Governor Brown signed into law the **Clean Energy and Pollution Reduction Act of 2015 (SB 350)** which established as a statewide policy widespread electrification of the transportation sector.<sup>71</sup> The law promotes additional investments in electrification by investor-owned electric utilities, based on guidance developed by the California Public Utilities Commission. Proposed investments should improve access to electricity as an economical and alternative transportation fuel, leverage vehicles as a resource to integrate a grid powered by 50% renewable electricity, and reduce emissions of air pollutants and greenhouse gases.

Solid Waste

Water

Currently under consideration (2017), **AB 1184** would authorize up to \$3 billion to be spent on EV rebates.<sup>72</sup>

### Existing Actions:

	Community	Municipal
Energy Use	Provided bike valet at community events such as the Lafayette Art & Wine Festival and Earth Day Festival.	Established a Bicycle-Pedestrian Advisory Committee to advise the City on issues related to non-motorized vehicles and pedestrians.
Green Construction	Promoted Go Lafayette to help Lafayette residents and employees make informed choices about getting around quickly and sustainably.	Adopted a Bikeways Master Plan, Walkways Master Plan, and Trails Master Plan.
COMMUNITY HEALTH	Promoted Bike Lafayette to support, encourage, and grow cycling community in Lafayette.	Provided three bicycles as part of Lafayette’s fleet.
	Participated in the Safe Routes to School Program.	Provided discounted BART tickets for daily commute to all full-time City employees.
Food & Agriculture	Promoted family bike rides during the summer.	Provided information on the City’s website regarding the location of public Electric Vehicle charging stations.
Green Business	Participated in the Lamorinda School Bus Program.	
	Provided intra-county bus transit service.	
TRANSPORTATION	Installed three Electric Vehicle Charging Stations at public parking lots in the downtown.	

## OPEN SPACE, PARKS, & LANDSCAPE

## GLOSSARY & ENDNOTES



# Transportation

INTRODUCTION	<b>Goals &amp; Programs:</b>			
GHG EMISSIONS INVENTORY	<b>T—Goal 1</b>	<b>Community – Reduce community-wide GHG emissions caused by transportation to the maximum extent practicable as directed by the City Council.</b>		
RESOURCE CONSERVATION	Program 1.1	Gradually over the very long term complete the programs identified in the Complete Streets Policy of the Circulation Element of the General Plan.	Engineering Department & Bicycle Pedestrian Advisory Committee	\$\$\$\$\$
Solid Waste	Program 1.2	Gradually over the very long term complete the capital improvements identified in the Bikeways Master Plan, Walkways Master Plan, and Trails Master Plan, as funding opportunities become available.	Engineering Department, Bicycle Pedestrian Advisory Committee, Circulation Commission, & Parks, Trails, & Recreation Department	\$\$\$\$\$
Water	Program 1.3	Update the On- and Off-Street Parking Ordinance to include short-term and long-term bicycle parking standards.	Planning Department, Engineering Department, & Bicycle Pedestrian Advisory Committee	\$\$\$
Energy Use	Program 1.4	Encourage opportunities for the installation of bike-share programs in Downtown Lafayette.	Planning Department, Transportation Planner, & Bicycle Pedestrian Advisory Committee	\$\$
Green Construction	Program 1.5	Require businesses with 50 or more full-time employees to participate in 511 Contra Costa’s Transportation Demand Management Program.	Planning Department	\$\$\$\$\$
COMMUNITY HEALTH	Program 1.6	Encourage car-sharing companies to designate spaces in public parking areas and multifamily housing projects.	Planning Department, Administrative Services Department, & Transportation Planner	\$\$
Food & Agriculture	Program 1.7	Require new development with 50 or more parking spaces to designate approximately 6% of parking spaces for clean air vehicles.	Planning Department	\$
Green Business	Program 1.8	As opportunities arise and funding becomes available, expand the network of electric vehicle charging stations and car-sharing parking spaces, particularly at BART, schools, shopping centers, and office complexes, to contribute to the State of California goal of having 1.5 million electric vehicles on the roads by 2025.	Planning Department, Engineering Department, & Administrative Services Department	\$\$\$\$\$
<b>TRANSPORTATION</b>	Program 1.9	Update the On-and Off-Street Parking Ordinance to include requirements to pre-wire for electric vehicle charging stations.	Planning Department & Engineering Department	\$\$
OPEN SPACE, PARKS, & LANDSCAPE	Program 1.10	Continue to be vigilant about federal, state, and local funding for bikeways improvements, transit service upgrade projects, and active transportation upgrades.	Transportation Planner, Circulation Commission, & Bicycle Pedestrian Advisory Committee	\$
GLOSSARY & ENDNOTES	Program 1.11	Complete and implement the Downtown Congestion Study, according to community support and as funding becomes available.	Transportation Planner, Engineering Department, & Circulation Commission	\$\$\$\$\$
	Program 1.12	Amend the zoning ordinance to disallow drive-thru restaurants, which result in significant emissions from vehicle idling.	Planning Department, with technical assistance from Transportation Planner	\$\$



# Transportation

INTRODUCTION	Program 1.13	Encourage CalTrans to create Electric Vehicle carpool lanes along Highway 24.	Transportation Planner & Environmental Task Force	\$\$\$\$
	Program 1.14	Coordinate with PG&E regarding optimal locations for Electric Vehicle charging stations in Lafayette (CPUC Decision 16-12-065; See Page 29).	Planning Department, Transportation Planner, & Environmental Task Force	\$\$\$\$
GHG EMISSIONS INVENTORY	<b>T—Goal 2</b> <b>Municipal – Reduce municipal GHG emissions caused by transportation to the maximum extent practicable as directed by the City Council.</b>			
	Program 2.1	Expand the City’s Green Municipal Purchasing Policy to include the replacement of all City-owned vehicles with alternative fuel, fuel-efficient, electric, or hybrid vehicles.	Administrative Services Department	\$\$
RESOURCE CONSERVATION	Program 2.2	Install electric vehicle charging stations on all City-owned properties.	Planning Department & Administrative Services Department	\$\$\$\$\$
	Program 2.3	As determined to be feasible by the affected department, expand the bicycle fleet to include bicycles at the Police Department, Public Works Corporation Yard, and the Community Center.	Various affected departments	\$
Solid Waste	Program 2.4	Provide short-term and long-term bicycle parking at all City-owned buildings.	Administrative Services Department	\$\$
Water	<b>T—Goal 3</b> <b>Public Outreach &amp; Education – Provide the community with further education on ways to reduce vehicle miles traveled.</b>			
	Program 3.1	Promote Go Lafayette, 511.org, Plug Share, and other similar transportation resources on the City’s website.	Transportation Planner	\$
Energy Use	Program 3.2	Expand the Bike to Work Day program by providing more outreach within the community.	Transportation Planner, Bicycle Pedestrian Advisory Committee, & Lafayette Chamber of Commerce	\$
	Program 3.3	Encourage the Lafayette Chamber of Commerce and Sustainable Lafayette to provide an annual free bicycle repair day.	Bicycle Pedestrian Advisory Committee, Lafayette Chamber of Commerce, & Sustainable Lafayette	\$
Green Construction	Program 3.4	Encourage Sustainable Lafayette to work with the school district to promote a campaign to be “idle-free.”	Sustainable Lafayette & Schools	\$
COMMUNITY HEALTH				
	Food & Agriculture			
Green Business				

## TRANSPORTATION

### OPEN SPACE, PARKS, & LANDSCAPE

### GLOSSARY & ENDNOTES

#### Indicators:

- Origin of Lafayette BART riders
- Number of transit riders that leave and arrive at Lafayette BART
- Miles of bike lanes (qualify by class ratings)
- Number of employees that participate in Bike to Work Day
- Parking occupancy at bike racks
- Parking occupancy at public EV charging stations
- Vehicle Miles Traveled (VMT)
- Travel mode share to Lafayette BART
- Number of cyclists that leave and arrive at Lafayette BART
- Number of people that participate in Bike to Work Day
- Number of bike racks
- Number of public EV charging stations
- Single-occupancy vehicle (SOV) mode share
- Percent of residents that reside within 1/2 mile of BART

# Open Space, Parks, & Landscape

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## OPEN SPACE, PARKS, & LANDSCAPE

### **Introduction:**

*Open space offers ecological, aesthetic, recreational, educational, social, and economic benefits, in addition to serving to protect biological resources, environmentally-sensitive areas, water resources, air quality, and natural resources such as creeks and trees. Trees, for example, provide community benefits including reducing stormwater runoff, capturing carbon dioxide, providing shade, privacy, and habitat, and beautifying neighborhoods. While the maintenance of open space and landscape produces some GHGs, the amount of GHG emissions produced is typically a small percentage of the total. Plants and soils are often referred to as “carbon sinks,” in which GHGs such as carbon dioxide are taken out of the atmosphere and stored in leaves, stems, and roots.<sup>73</sup> The City currently has 4,035 acres of tree canopy, or approximately 41% of the city’s land, which is higher than the tree coverage of Contra Costa County (15%) and the State of California (18%). Economically, the value of the City’s trees equate to \$19.8 million per year in terms of carbon storage and \$730,000 annually in terms of carbon sequestration. According to the Arbor Environmental Alliance, a single tree can absorb CO2 at a rate of 48 lbs/year.<sup>74</sup> Lafayette also has 7 public parks constituting approximately 91 acres of existing parkland. Based on the GHG inventory, Buildings & Facilities, which includes Buckeye Fields and the Community Park, encompassed 28% of the City’s municipal emissions in 2015, and Water Transport, which includes sprinklers and irrigation control, encompassed less than 1% of the City’s municipal emissions. Emissions from both of these categories, Buildings & Facilities and Water Transport, decreased slightly between 2005 and 2015.*

### **Open Space, Parks, & Landscape Standards:**

#### *Federal Standards*

**U.S. Forest Service Open Space Conservation Strategy (2007)** strategy outlines national priorities for the USFS to achieve a network of open space across the landscape supporting healthy ecosystems and quality of life, including private forests and rangelands, national forests and grasslands, other public land, riparian areas and wildlife corridors, and urban greenspaces. The strategy identifies four priority actions: 1) Convene partners to identify and protect priority open space; 2) Promote national policies and markets to help private landowners conserve open space; 3) Provide resources and tools to help communities expand and connect open spaces; and 4) Participate in community growth planning to reduce ecological impacts and wildfire risks.<sup>75</sup>

#### *State Standards*

**State of California Government Code Section 65560 et. Seq.** covers state standards for open space lands within local planning, including definition of “open-space land” along with goals for use and management of open spaces within cities and/or counties of California.<sup>76</sup>

#### *Local Standards*

**Contra Costa County General Plan Chapter 9: Open Space Element** chapter satisfies the requirements of Section 65560 et. Seq. The three major components are a policy framework for the preservation of open space lands, an open space map identifying county land subject to the policies contained herein, and an implementation program. Section 9.5 of the Open Space Element lists Overall Goals and Policies, which include: 1) to preserve and protect the ecological, scenic, cultural/historic, and recreational resource lands of the County; 2) to conserve the open space and natural resources of the county through control of the direction, extent, and timing of urban growth; 3) to achieve a balance of open space in urban areas to meet the social, environmental, and economic needs of the County now and for the future.<sup>77</sup>

**Program P-1.3.1** of the City’s **General Plan** outlines the standard of providing up to 5-acres of parkland per every 1,000 residents for the dedication, acquisition, and improvement of parkland pursuant to the provisions of the Quimby Act.<sup>78</sup>

# Open Space, Parks, & Landscape

## INTRODUCTION

### OPEN SPACE, PARKS, & LANDSCAPE

#### Existing Actions:

## GHG EMISSIONS INVENTORY

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## COMMUNITY HEALTH

Food & Agriculture

Green Business

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## OPEN SPACE, PARKS, & LANDSCAPE

## GLOSSARY & ENDNOTES

Community	Municipal
Worked to create awareness of the need to protect undeveloped land & identify potential land available for acquisition.	Drafted Chapter 6-17 "Tree Protection" of the Lafayette Municipal Code.
Encouraged civic planting and conservation programs.	Worked with the Association of Bay Area Governments to designate Burton Ridge and Lafayette Ridge as Priority Conservation Areas.
	Developed an Open Space Plan that identifies areas with open space preservation potential.
	Partnered with the City of Walnut Creek, East Bay Regional Park District, and the Muir Heritage Land Trust to designate a 23-acre parcel as permanent part of Acalanes Ridge Open Space.
	Hosted an annual Creek Clean-Up Day.
	Developed creek setback regulations.

# Open Space, Parks, & Landscape

## INTRODUCTION

### OPEN SPACE, PARKS, & LANDSCAPE

#### Goals & Programs:

<b>OS—Goal 1</b>	<b>Community – Support the preservation and enhancement of open space and recreational areas for the community.</b>		
Program 1.1	Develop an Arbor Day Celebration.	Sustainable Lafayette, with assistance from Parks, Trails, & Recreation Department	\$
Program 1.2	Encourage ongoing Lafayette-based donation programs for open space preservation and maintenance.	Sustainable Lafayette	\$
<b>OS—Goal 2</b>	<b>Municipal – Prioritize at least three programs by 2030 that will help to preserve open space, parks, &amp; landscape areas.</b>		
Program 2.1	Update the list of existing City-maintained trees to identify and prioritize potential tree planting locations.	Parks, Trails, & Recreation Department & Public Works Department	\$
Program 2.2	Expand tree planting through programs, such as adopt-a-tree, commemorative plaques, and other volunteer-based planting.	Sustainable Lafayette & Parks, Trails, & Recreation Department	\$\$
Program 2.3	Develop a list of climate-appropriate trees for maximizing shade and carbon sequestration to be incorporated as part of the Downtown Street Improvement Master Plan. Consider using the CUFR Carbon Calculator.	Environmental Task Force & Planning Department, with review by Parks, Trails, & Recreation Department & the Downtown Street Improvement Master Plan Implementation Committee	\$\$\$
Program 2.4	Replace City-owned lawn and garden equipment with new, battery-powered, zero-emission lawn and garden equipment when the zero-emission equipment becomes more efficient.	Public Works Department	\$
<b>OS—Goal 3</b>	<b>Public Outreach &amp; Education – Encourage engagement and increase awareness of the importance of open space, parks, and landscape.</b>		
Program 3.1	Partner with regional organizations to create volunteer opportunities for trail work, habitat restoration, open space maintenance, and tree planting.	Parks, Trails, & Recreation Department	\$\$\$
Program 3.2	Promote participation in StopWaste.org’s Bay Friendly Landscaping program and identify educational demonstration projects.	Planning Department & Sustainable Lafayette	\$

#### Indicators:

- Number of acres of designated open space and parkland.
- Parkland acres per capita.
- Number of properties within 1/2-mile of a park.
- Number of net new trees planted.

## GHG EMISSIONS INVENTORY

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## GLOSSARY & ENDNOTES

# Glossary & Acronyms

INTRODUCTION	
GHG EMISSIONS INVENTORY	<ol style="list-style-type: none"> <li>1. <b>Alternate Daily Cover (ADC)</b> is a green material used for solid waste cover in landfills. ADC does not typically make up a significant source of emissions.</li> <li>2. <b>Assembly Bill (AB)</b> refers to legislation passed or proposed by the California State Assembly.</li> <li>3. <b>Business-as-Usual (BAU)</b> refers to maintaining the status quo and operating without attempts to reduce emissions.</li> </ol>
RESOURCE CONSERVATION	<ol style="list-style-type: none"> <li>4. <b>Community Choice Aggregation (CCA)</b> aggregates the buying power of individual customers within a defined jurisdiction in order to secure alternative energy supply contracts on a community-wide basis, but allowing consumers not wishing to participate to opt out.</li> </ol>
Solid Waste	<ol style="list-style-type: none"> <li>5. An <b>Environmental Indicator</b> is a statistic or trend that displays the direction in which a particular condition is heading. The indicators are grouped under the City’s adopted Environmental Strategy goals and establish baselines and measurements which gauge the community’s progress in meeting these goals. It is anticipated that more indicators will be added as data relevant to Lafayette becomes available.</li> </ol>
Water	<ol style="list-style-type: none"> <li>6. <b>Gleaning</b> is the act of collecting leftover crops for those in need.</li> </ol>
Energy Use	<ol style="list-style-type: none"> <li>7. <b>Mobile Emissions</b> include emissions resulting from both on– and off-road vehicles and equipment.</li> <li>8. <b>Senate Bill (SB)</b> refers to legislation passed or proposed by the California State Senate.</li> </ol>
Green Construction	<ol style="list-style-type: none"> <li>9. <b>Waste Diversion</b> is the process of reducing the amount of waste disposed of at landfills through waste prevention, recycling, reuse, and composting.</li> <li>10. <b>Zero Emissions Vehicle (ZEV)</b> is a vehicle that emits no exhaust gas from the onboard source of power.</li> </ol>
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# Endnotes

<b>INTRODUCTION</b>	<p><sup>1</sup> Renewables Portfolio Standard (RPS) Program (<a href="http://www.energy.ca.gov/renewables/">http://www.energy.ca.gov/renewables/</a>)</p>	<p><sup>29</sup> MWELO adoption (<a href="http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf">http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf</a>)</p>
<b>GHG EMISSIONS INVENTORY</b>	<p><sup>2</sup> CA Air Resources Board ( <a href="https://www.arb.ca.gov/newsrel/newsrelease.php?id=760">https://www.arb.ca.gov/newsrel/newsrelease.php?id=760</a>)</p> <p><sup>3</sup> AB117: (<a href="http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf">http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf</a> )</p>	<p><sup>30</sup>SF Regional Water Quality Control Board General Order 96-011 (<a href="http://www.ebmud.com/index.php/download_file/force/804/779/?Order_96-011_Cover_Page_Master_Permit_Att_G-Website-Rev_101608_0.pdf">www.ebmud.com/index.php/download_file/force/804/779/?Order_96-011_Cover_Page_Master_Permit_Att_G-Website-Rev_101608_0.pdf</a>)</p>
<b>RESOURCE CONSERVATION</b>	<p><sup>4</sup> AB32 Global Warming Solutions Act (<a href="https://www.arb.ca.gov/cc/ab32/ab32.html">https://www.arb.ca.gov/cc/ab32/ab32.html</a>)</p> <p><sup>5</sup> Executive Order S-3-05 (<a href="https://www.gov.ca.gov/news.php?id=1861">https://www.gov.ca.gov/news.php?id=1861</a>)</p>	<p><sup>31</sup> EBMUD Urban Water Management Plan 2015, (<a href="https://wuedata.water.ca.gov/public/uwmp_attachments/4291196525/UWMP-2015-%20BOOK-FINALweb.pdf">https://wuedata.water.ca.gov/public/uwmp_attachments/4291196525/UWMP-2015-%20BOOK-FINALweb.pdf</a>)</p> <p><sup>32</sup> US Energy Information Administration (<a href="http://www.eia.gov/environment/emissions/ghg_report/ghg_carbon.cfm">http://www.eia.gov/environment/emissions/ghg_report/ghg_carbon.cfm</a>)</p>
Solid Waste	<p><sup>6</sup> Executive Order B-30-15 (<a href="https://www.gov.ca.gov/news.php?id=18938">https://www.gov.ca.gov/news.php?id=18938</a>)</p> <p><sup>7</sup> Cal Recycle (<a href="http://www.calrecycle.ca.gov/climate/organics/">http://www.calrecycle.ca.gov/climate/organics/</a>)</p> <p><sup>8</sup> EPA (<a href="https://www.epa.gov/lmop/basic-information-about-landfill-gas">https://www.epa.gov/lmop/basic-information-about-landfill-gas</a>)</p>	<p><sup>33</sup> World Bank (<a href="http://www.data.worldbank.org/indicator/EG.USE.COMM.FO.Z5">http://www.data.worldbank.org/indicator/EG.USE.COMM.FO.Z5</a>)</p> <p><sup>34</sup> California Public Utilities Commission (<a href="http://www.cpuc.ca.gov/NR/rdonlyres/68D58BFE-E350-4D49-B3D6-DAB43B806A5F/0/2013Q2RPSReportFINAL.PDF">http://www.cpuc.ca.gov/NR/rdonlyres/68D58BFE-E350-4D49-B3D6-DAB43B806A5F/0/2013Q2RPSReportFINAL.PDF</a>)</p>
Water	<p><sup>9</sup> Cal Recycle “State of Disposal in California” (<a href="http://www.calrecycle.ca.gov/Publications/Documents/1524%5C20151524.pdf">http://www.calrecycle.ca.gov/Publications/Documents/1524%5C20151524.pdf</a>)</p> <p><sup>10</sup> AB 939 (<a href="http://www.calrecycle.ca.gov/laws/legislation/calhist/1985to1989.htm">http://www.calrecycle.ca.gov/laws/legislation/calhist/1985to1989.htm</a>)</p>	<p><sup>35</sup> California Energy Commission “Tracking Progress” (<a href="http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf">www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf</a>)</p> <p><sup>36</sup> AB117: (<a href="http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf">http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf</a> )</p>
Energy Use	<p><sup>11</sup> AB 341 (<a href="http://www.calrecycle.ca.gov/recycle/commercial/">http://www.calrecycle.ca.gov/recycle/commercial/</a>)</p> <p><sup>12</sup> CALGreen (<a href="http://www.bsc.ca.gov/Home/CALGreen.aspx">http://www.bsc.ca.gov/Home/CALGreen.aspx</a>)</p> <p><sup>13</sup> Cal Recycle “State of Disposal in California” (<a href="http://www.calrecycle.ca.gov/Publications/Documents/1524%5C20151524.pdf">http://www.calrecycle.ca.gov/Publications/Documents/1524%5C20151524.pdf</a>)</p>	<p><sup>37</sup> MCE Clean Energy’s 2017 Integrated Resource Plan QQuest</p> <p><sup>38</sup> QuEST</p> <p><sup>39</sup> Cal Poly Climate Action Plan (<a href="https://afd.calpoly.edu/sustainability/campus_resources/climate_action">https://afd.calpoly.edu/sustainability/campus_resources/climate_action</a>)</p>
Green Construction	<p><sup>14</sup> City of Lafayette Environmental Strategy (<a href="http://www.lovelafayette.org/home/showdocument?id=1847">http://www.lovelafayette.org/home/showdocument?id=1847</a>)</p> <p><sup>15</sup> EPA (<a href="https://www.epa.gov/nutrientpollution/sources-and-solutions-stormwater">https://www.epa.gov/nutrientpollution/sources-and-solutions-stormwater</a>)</p>	<p><sup>40</sup> CCR (<a href="https://govt.westlaw.com/calregs/index?__lrTS=20171003222502545&amp;bhpc=1&amp;transitionType=Default&amp;contextData=(sc.Default)">https://govt.westlaw.com/calregs/index?__lrTS=20171003222502545&amp;bhpc=1&amp;transitionType=Default&amp;contextData=(sc.Default)</a>)</p>
<b>COMMUNITY HEALTH</b>	<p><sup>16</sup> Pacific Institute “Executive Summary California’s Water Footprint” (<a href="http://pacinst.org/wp-content/uploads/2013/02/executive_summary6.pdf">http://pacinst.org/wp-content/uploads/2013/02/executive_summary6.pdf</a>)</p> <p><sup>17</sup> PPIC Water and Policy Center “California’s Water: Water and Energy Use” (<a href="http://www.ppic.org/content/pubs/report/R_1016AER.pdf">http://www.ppic.org/content/pubs/report/R_1016AER.pdf</a>)</p>	<p><sup>41</sup> Renewables Portfolio Standard (RPS) Program (<a href="http://www.energy.ca.gov/renewables/">http://www.energy.ca.gov/renewables/</a>)</p> <p><sup>42</sup> CA Solar Initiative (<a href="http://www.gosolarcalifornia.ca.gov/csi/index.php">http://www.gosolarcalifornia.ca.gov/csi/index.php</a>)</p>
Food & Agriculture	<p><sup>18</sup> PPIC Water and Policy Center “California’s Water Footprint” (<a href="http://pacinst.org/wp-content/uploads/2013/02/ca_ftprint_full_report3.pdf">http://pacinst.org/wp-content/uploads/2013/02/ca_ftprint_full_report3.pdf</a>)</p> <p><sup>19</sup> Pacific Institute “Assesment of California’s Water Footprint” (<a href="http://pacinst.org/publication/assessment-of-californias-water-footprint/">http://pacinst.org/publication/assessment-of-californias-water-footprint/</a>)</p>	<p><sup>43</sup> CALGreen (<a href="http://www.bsc.ca.gov/">http://www.bsc.ca.gov/</a>)</p> <p><sup>44</sup> AB 758 (<a href="https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100AB758">https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100AB758</a>)</p>
Green Business	<p><sup>20</sup> East Bay Municipal Utility District, Central Contra Costa Sanitary District</p> <p><sup>21</sup> Office of the Governor <a href="https://www.gov.ca.gov/news.php?id=18368">https://www.gov.ca.gov/news.php?id=18368</a></p> <p><sup>22</sup> CA Department of Water Resources (<a href="http://www.water.ca.gov/waterconditions/declaration.cfm">http://www.water.ca.gov/waterconditions/declaration.cfm</a> )</p>	<p><sup>45</sup> AB 802 (<a href="https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB802">https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB802</a>)</p> <p><sup>46</sup> Berkeley Climate Action Plan (<a href="https://www.cityofberkeley.info/climate/">https://www.cityofberkeley.info/climate/</a>)</p>
<b>TRANSPORTATION</b>	<p><sup>23</sup> Executive Order B-29-15 (<a href="http://gov/docs/4.1.15_Executive_Order.pdf">http://gov/docs/4.1.15_Executive_Order.pdf</a>)</p> <p><sup>24</sup> CALGreen (<a href="http://www.bsc.ca.gov/">http://www.bsc.ca.gov/</a>)</p>	<p><sup>47</sup> US Green Building Council (<a href="https://new.usgbc.org/">https://new.usgbc.org/</a>)</p> <p><sup>48</sup> Build it Green (<a href="http://www.builditgreen.org/greenpoint-rated/">http://www.builditgreen.org/greenpoint-rated/</a>) and Deborah Lichliter</p> <p><sup>49</sup> Food and Agriculture Organization (<a href="http://www.fao.org/news/story/en/item/197608/icode/">http://www.fao.org/news/story/en/item/197608/icode/</a>)</p>
<b>OPEN SPACE, PARKS, &amp; LANDSCAPE</b>	<p><sup>25</sup> California Water Action Plan (<a href="http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf">http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf</a>)</p> <p><sup>26</sup> Water rebates (<a href="http://www.saveourwaterrebates.com/">http://www.saveourwaterrebates.com/</a>)</p>	<p><sup>50</sup> Green Business Program (<a href="http://www.lovelafayette.org/business/green-business">http://www.lovelafayette.org/business/green-business</a>)</p> <p><sup>51</sup> EPA (<a href="https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks">https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks</a>)</p>
<b>GLOSSARY &amp; ENDNOTES</b>	<p><sup>27</sup> California Water Plan Update (<a href="http://www.water.ca.gov/waterplan/cwp/update2018/index.cfm">http://www.water.ca.gov/waterplan/cwp/update2018/index.cfm</a>)</p> <p><sup>28</sup> MWELO (<a href="http://www.water.ca.gov/wateruseefficiency/sb7/">http://www.water.ca.gov/wateruseefficiency/sb7/</a>)</p>	<p><sup>52</sup> CARB (<a href="https://www.arb.ca.gov/cc/inventory/data/data.htm">https://www.arb.ca.gov/cc/inventory/data/data.htm</a>)</p> <p><sup>53</sup> Decision 16-12-065 (<a href="https://cpucadviceletters.org/documents/2947/view/">https://cpucadviceletters.org/documents/2947/view/</a>)</p> <p><sup>54</sup> CPUC (<a href="http://www.cpuc.ca.gov/General.aspx?id=5936">http://www.cpuc.ca.gov/General.aspx?id=5936</a>)</p> <p><sup>55</sup> Title 24 (<a href="http://www.energy.ca.gov/title24/">http://www.energy.ca.gov/title24/</a>)</p>

# Endnotes

<b>INTRODUCTION</b>	<p><sup>56</sup> Access California (<a href="http://www.pevcollaborative.org/sites/all/themes/pev/files/DSA_EVCS%20Webinar%2009%20Sep%202015.pdf">http://www.pevcollaborative.org/sites/all/themes/pev/files/DSA_EVCS%20Webinar%2009%20Sep%202015.pdf</a>)</p> <p><sup>57</sup> 2016 ZEV Action Plan (<a href="https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf">https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf</a>)</p>
<b>GHG EMISSIONS INVENTORY</b>	<p><sup>58</sup> 2013 ZEV Action Plan (<a href="http://www.opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf">http://www.opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf</a>)</p> <p><sup>59</sup> West Coast Electric Highway (<a href="http://www.westcoastgreenhighway.com/electrichighway.htm">http://www.westcoastgreenhighway.com/electrichighway.htm</a>)</p> <p><sup>60</sup> NEDO (<a href="https://www.evgo.com/about/news/drivethearc/">https://www.evgo.com/about/news/drivethearc/</a>)</p> <p><sup>61</sup> "Drive the Dream" (<a href="http://www.prnewswire.com/news-releases/drive-the-dream-2015-california-accelerates-its-leadership-of-new-plug-in-electric-vehicle-investments-and-partnerships-resulting-in-significant-market-growth-300160967.html">http://www.prnewswire.com/news-releases/drive-the-dream-2015-california-accelerates-its-leadership-of-new-plug-in-electric-vehicle-investments-and-partnerships-resulting-in-significant-market-growth-300160967.html</a>)</p>
<b>RESOURCE CONSERVATION</b>	<p><sup>62</sup> AB 1493 (<a href="http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200120020AB1493">http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200120020AB1493</a>)</p> <p><sup>63</sup> SB 97 (<a href="http://resources.ca.gov/ceqa/guidelines/">http://resources.ca.gov/ceqa/guidelines/</a>)</p>
Solid Waste	<p><sup>64</sup> AB 118 (<a href="https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB118">https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB118</a>)</p> <p><sup>65</sup> SB 375 (<a href="https://www.arb.ca.gov/cc/sb375/sb375.htm">https://www.arb.ca.gov/cc/sb375/sb375.htm</a>)</p> <p><sup>66</sup> Executive Order B-16-12 (<a href="https://www.gov.ca.gov/news.php?id=17472">https://www.gov.ca.gov/news.php?id=17472</a>)</p> <p><sup>67</sup> AQIP (<a href="https://www.arb.ca.gov/msprog/aqip/aqip.htm">https://www.arb.ca.gov/msprog/aqip/aqip.htm</a>)</p>
Water	<p><sup>68</sup> ARFVTP (<a href="http://www.energy.ca.gov/drive/">http://www.energy.ca.gov/drive/</a>)</p> <p><sup>69</sup> SB1275 (<a href="https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1275">https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1275</a>)</p> <p><sup>70</sup> SB1204 (<a href="https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1204">https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1204</a>)</p> <p><sup>71</sup> SB350 (<a href="https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350">https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350</a>)</p>
Energy Use	<p><sup>72</sup> AB1184 (<a href="https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1184">https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1184</a>)</p> <p><sup>73</sup> EPA (<a href="https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks">https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks</a>)</p> <p><sup>74</sup> Carbon Tree Facts (<a href="http://www.arborenonvironmentalalliance.com/carbon-tree-facts.asp">http://www.arborenonvironmentalalliance.com/carbon-tree-facts.asp</a>)</p>
Green Construction	<p><sup>75</sup> USFS (<a href="https://www.fs.fed.us/openspace/OS_Strategy_final_web.pdf">https://www.fs.fed.us/openspace/OS_Strategy_final_web.pdf</a>)</p> <p><sup>76</sup> CA Gov Code Section 65560 (<a href="http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&amp;sectionNum=65560">http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&amp;sectionNum=65560</a>)</p>
<b>COMMUNITY HEALTH</b>	<p><sup>77</sup> Contra Costa County General Plan Chapter 9: Open Space Element (<a href="http://www.co.contra-costa.ca.us/DocumentCenter/View/30919">http://www.co.contra-costa.ca.us/DocumentCenter/View/30919</a>)</p> <p><sup>78</sup> City of Lafayette General Plan (<a href="http://www.lovelafayette.org/Home/ShowDocument?id=1930">http://www.lovelafayette.org/Home/ShowDocument?id=1930</a>)</p>
Food & Agriculture	
Green Business	
<b>TRANSPORTATION</b>	
<b>OPEN SPACE, PARKS, &amp; LANDSCAPE</b>	
<b>GLOSSARY &amp; ENDNOTES</b>	