
Lafayette

The Lafayette Energy Sustainability Advisory Committee:

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Introduction

Lafayette's Energy History

Lafayette and Mary Miller came to this area in 1871 to operate a stage stop and later to farm. Widowed, Mary Miller operated the farm that gained a reputation as "Among the best conducted large farms in Boulder County"[1] with crops of grain, hay, horses, cattle, hogs, garden, orchard, vineyard, fruit and shade trees.

Coal was discovered on the Miller Farm in 1884 and John Simpson sank the first mine shaft in 1887. Mary Miller founded Lafayette the next year. Coal mining was a major activity in the area for nearly a century.

The Northern Colorado Power Company plant at Waneka Lake generated electricity from 1907 into the 1950s and provided power to the communities of Fort Collins, Longmont, Boulder, Louisville, as well as for the Denver-Interurban trolley that went from Denver to Boulder and Eldorado Springs.

In 1956 the last coal mine closed and agriculture again became a dominant economic activity in the Lafayette area. Since then Lafayette has experienced significant residential growth and the farming-based economy shifted more to general commerce, professional service, labor, skilled trades, and light industry.

Today Lafayette faces energy issues that recall its history: transportation, agriculture, energy production and distribution, commerce, and industry. These issues affect our jobs, our homes, our families, and the health of our community and our natural environment. These were the challenges of our past, these are the challenges of today, and all define and in turn are defined by how we create and use energy.

[1] 1886 Boulder County Herald quoted in the City of Lafayette Comprehensive Plan 4 A p83

Lafayette's Energy Today and Tomorrow

In recent years, with increased awareness of the finite quantities of fossil fuels and their impact on the environment, the difficulty of fostering a robust local economy and high quality of life has created new challenges and opportunities. While sometimes overshadowed by its neighbors, Lafayette has quietly moved to develop energy sustainability.

In the early 1990s the Nyland Cohousing Community was built by Wonderland Homes on the western edge of town, with passive solar design recently augmented with photovoltaic systems. Many other Lafayette homeowners have added solar hot water and solar photovoltaic systems to their roofs and taken many other actions to use energy more efficiently.

In 2007, the City of Lafayette completed a comprehensive energy audit of municipal facilities, contracting with Johnson Controls to conduct an in-depth inventory of energy consumption in public buildings and public works, including street and traffic lighting. Energy conservation measures including efficient lighting, controls, and building mechanical units plus energy generation measures including PV, solar hot water, and methane reuse at the wastewater treatment plan will save the city over $100,000 every year.

Lafayette Public Works Department has worked with Eco-Cycle, Boulder County and Western Disposal to offer a city-wide single stream recycling program with significant energy savings and a large increase in recycling. The Lafayette Planning department closely monitors national building code standards and adopts the most recent as they are published, with particular focus on energy efficiency. Lafayette is also implementing a solar power services agreement which will allow the city to cost effectively mount solar PV panels at or on many city facilities and generate power at a fixed rate, leading ultimately to the ownership of these PV resources.

While Lafayette, like most communities, faces considerable challenges in becoming less reliant on fossil fuels, it is also well positioned to continue to pioneer and lead in a number of areas. Colorado's Governor recently announced plans for a Clean Energy Education and Training Center that will serve as a model for regional centers around the nation. The Center will be made possible through collaboration with the state, the Department of Energy's National Renewable Energy Laboratory, and Veterans Green Jobs. Lafayette's central location in Northern Colorado and proximity to the Denver Metro area, the SolarTAC center near DIA, the Wind Training Center north of Rocky Flats, and to nearby research universities and community colleges make it an ideal potential location to house that training center.

There are also discussions of a strategic network of smart grid communities from near the Wyoming border to southern Colorado. Working with Xcel Energy, Lafayette could possibly join that network, beginning by establishing a "Green District" in the current redevelopment area near City Hall.

This Master Plan outlines the city of Lafayette's status and challenges in achieving improved energy efficiency and renewable energy generation. In order to rise above the pack and seize the opportunities that are knocking on our door, the Lafayette Energy Sustainability Advisory Committee recommends that City take the necessary steps to demonstrate through creative projects and "outside the box" solutions, true energy sustainability for the 21st Century.

Purpose of the Energy Sustainability Master Plan

The Lafayette Energy Sustainability Master Plan is designed to help summarize for the city council and citizens the essential energy-related issues and to offer guidance and recommendations to the city to help in making smart energy decisions that will save money through energy conservation, protect our climate by reducing greenhouse gas emissions, and expand economic opportunity by taking advantage of new clean energy development.

The Lafayette Energy Sustainability Advisory Committee

The Lafayette City Council passed a Resolution on January 15, 2008 to form the Lafayette Energy Sustainability Advisory Committee (LESAC). [2]

The committee was established to serve in an advisory capacity and to make recommendations to the city council on the following matters:

(a) To examine and assess the benefits and impacts of energy conservation and clean energy generation in the City of Lafayette.

(b) To advise the city council on policy matters relating to energy conservation and clean energy generation in the City of Lafayette.

(c) To prepare and recommend to city council an energy sustainability master plan to address matters such as existing and future energy issues and technologies.

(d) In conjunction with such plan, to prepare and make timely recommendations to city council for specific actions related to the plan.

(e) To make recommendations to city officials regarding implementation of the plan as related to public improvements and other municipal activities, functions, projects, actions and operations.

(f) To develop public communications and educational activities related to energy sustainability and implementation of the plan.

Seven city residents and one alternate were appointed to serve on this Board.

One member from the city council serves as the council liaison and one person appointed by the city administrator serves as a staff liaison. Both are nonvoting members.

2 (Ord. No. 2007-49, § 1, 11-6-07) Code of Ordinances, City of Lafayette Colorado

Development of the Lafayette Energy Sustainability Master Plan

To accomplish its mission as directed, LESAC created this Energy Sustainability Master Plan as a guide to energy sustainability goals and a planning tool to help the City Council integrate energy issues in its decision making process.

Planning Process

LESAC formed a volunteer Master Plan Work Group in February 2008. The Master Plan Work Group presented a first Draft of the Master Plan to the Energy Sustainability Advisory committee in May 2008. In August 2008 a first draft of the Master Plan, data, and progress were presented to the Lafayette City Council.

The committee is using greenhouse gas data from Boulder County to define a baseline for tracking our progress.

The Update Process

The Energy Sustainability Master Plan is a dynamic document that will be updated periodically to reflect the affect of actions taken as well as new information, legislation, technologies, environmental changes, and public input. The strategies addressed in the ESMP are not meant to be exhaustive or limiting but rather represent those strategies currently known to the authors and thought to be feasible and to have significant benefits.

Lafayette's local energy use patterns and available energy sources are dependent on regional, national and global energy developments and economic conditions; therefore, the assumptions and conditions that shape this Plan should be evaluated periodically and amended to remain current with changing conditions and with Lafayette’s community values.

Relationship to Other Plans and Documents

The Energy Sustainability Master Plan was written in coordination with goals of the City of Lafayette’s Comprehensive Plan and is designed to be integrated into that plan, and therefore some of the recommendations of this Master Plan may require revisiting and revising elements of the next version of the Comprehensive Plan.

The Plan is also designed to function cooperatively with the Boulder County Consortium of Cities Sustainable Energy Plan, and the Colorado Climate Action Plan. It was developed with input from the Lafayette Waste Reduction Advisory committee and the Lafayette Open Space Advisory Committee.

Greenhouse Gas Emissions Inventory in Lafayette

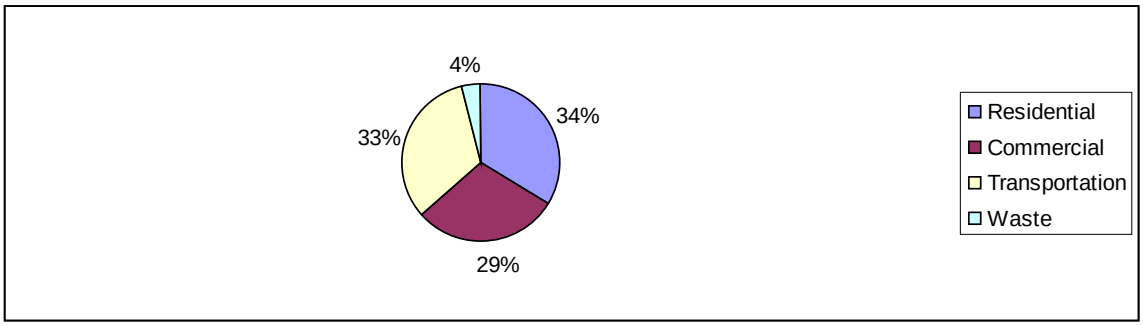
Baseline

In 2005, the Boulder County Consortium of Cities Energy Strategy Task Force conducted a countywide greenhouse gas (GHG) inventory to understand current sources of emissions by city and sector. Based on this inventory, 90 percent of the county's entire GHG emissions were attributed to commercial, residential, transportation, and industrial sectors. The city of Lafayette generated six percent of the county's emissions. Unless otherwise noted, the LESAC will rely on this countywide inventory to provide the necessary baseline data from which outcomes of strategies will be measured.

Tracking Method:

The inventory process considered all the predominant greenhouse gases: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), halocarbons (HFCs and PFCs), and sulfur hexafluoride (SF6). Using the Global Warming Potential of these gases, quantified emissions were converted to the standard unit of metric tons of CO2-equivalent (tCO2e). A second countywide assessment will be conducted in 2010.

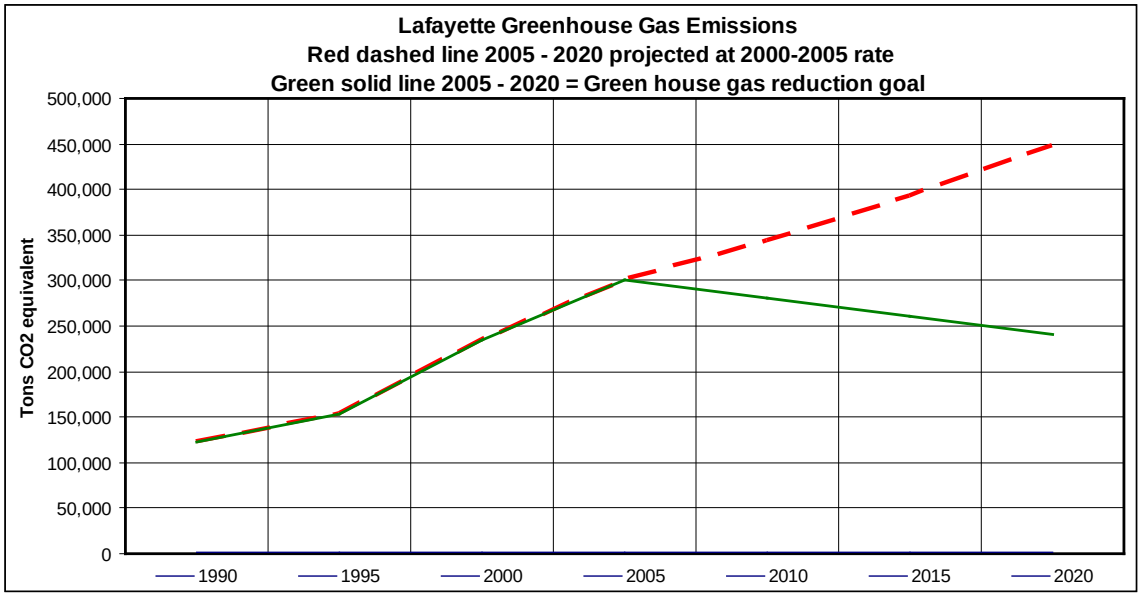
Lafayette Energy Use by Sector 2005



Sector	Residential	Commercial	Transportation	Waste	Total
tCO2e *	102,032	87,027	99,031	12,004	300,094

* Metric tons of CO2equivalent.

Historical and projected Greenhouse Emissions



Goals

Reduce greenhouse gas emissions

Promote energy conservation

Promote clean renewable energy generation

Encourage economic development through local energy jobs

Reduce energy costs through reduced energy consumption

Develop and support sustainable energy education

Objectives

Greenhouse Gas Reduction Target: Reduce greenhouse gas emissions by 20 percent below 2005 levels by 2020, and 80 percent below 2005 levels by 2050. Greenhouse Gas emission reduction shall be our standard for measuring progress in energy sustainability. It can be attained through of the following objectives:

Municipal:

Increase energy efficiency and use of renewable energy in Lafayette City buildings and operations to achieve the greenhouse gas reduction target. Encourage composting to reduce methane generation.

Residential:

Promote, support, and enable increased energy efficiency and use of renewable energy generation and storage technologies in residential buildings to achieve the greenhouse gas reduction target.

Commercial:

Promote, support, and enable increased energy efficiency and use of renewable energy generation and storage technologies in commercial and industrial buildings and operations to achieve the greenhouse gas reduction target.

Transportation:

Reduce transportation energy consumption to achieve the greenhouse gas reduction target with a combination of increased vehicle mileage, reduced mileage traveled, increased transportation system efficiency and increased use of mass transit and non-polluting transportation options.

Education and Outreach:

Facilitate sustainable energy education, discussion, and outreach to Lafayette citizens, schools, and businesses.

Economic Development:

Promote local economic development through clean energy jobs. Demonstrate energy sustainability living and learning solutions on varying scales, including a Green Development District. Be active in regional and national programs and projects that showcase the clean energy economy and lifestyles.

Land Use:

Use urban planning to produce a more walkable community, better bicycle access, and a less car dependency.
Improve the carbon capturing capacity of the environment by promoting healthy trees, grasslands, farmland, and open space.

Cooperation:

Coordinate with government and non-government energy programs that affect Lafayette and develop financial incentives for energy sustainability.

Recommended Strategies and Actions

Municipal Strategies

- Continue to increase energy efficiency in City Facilities, fleet and equipment.
- Increase energy efficiency through the most energy efficient building codes practical.
- Use the City of Lafayette newsletter and web site to provide information about energy efficiency and alternative energy programs.
- Encourage composting to reduce methane generation by keeping all compostable material out of the landfill.

Residential Strategies

- Provide Lafayette residents with assistance in increasing energy efficiency and sustainable energy production.
- Promote, support, enable increased energy efficiency in residential, buildings.
- Encourage energy audits of all Lafayette residences.
- Assist in the implementation of all economically feasible energy efficiency measures in Lafayette residences.
- Encourage increasing energy efficiency in residential remodeling.
- Encourage and support the development of net zero energy homes.

Commercial Strategies

- Encourage energy audits of all Lafayette businesses.
- Encourage and assist businesses in finding ways to increase energy efficiency and sustainable energy production.
- Assist in the implementation of all economically feasible energy efficiency measures in Lafayette businesses.

Transportation Strategies

- Reduce transportation energy consumption through a combination of increased vehicle efficiency, reduced mileage traveled, increased transportation system efficiency and increased use of mass transit and non-polluting transportation options.
- Enable and encourage biking by adding and extending bike paths, increasing bike path connections, and by improving bicycle safety and usability of city streets.

Education Strategies

- Support energy efficiency education and outreach efforts directed at residential, commercial, and municipal energy use.
- Promote sustainable energy education and action in Lafayette city operations, and in schools, homes, and businesses.
- Encourage citizen involvement in EnergySmart and other suitable programs.

Economic Development Strategies

- Bring energy efficiency and renewable energy jobs and businesses to Lafayette.
- Optimize energy efficiency in economic development.
- Support economic development that reduces residential energy use.
- Create a “Green” development zone that encourages energy efficient and renewable energy structures, infrastructures and lifestyles.

Land Use Strategies

- Include energy considerations when planning of residential, commercial, and transportation developments.
- Improve the carbon capturing capacity of the environment by promoting healthy trees, grasslands, farmland, and open space.
- Maintain and expand the urban forest developing and promulgating tree planting standards to shade roads, parking surfaces, and buildings unless they are utilized for solar electric or solar thermal energy capture.
- Work to preserve all possible local farmland.
- Protect and restore the City’s urban creek system.
- Utilize sustainable park and golf course design and maintenance practices.

Cooperation Strategies

- Continue involvement in the Boulder County Consortium of Cities Energy Strategy Task Force.
- Take full advantage of the resources of regional, state, national energy efficiency and sustainable energy programs.