

CHAPTER 12 SUSTAINABILITY AND RESILIENCE

Sustainability and resilience are both important to the future of Fontana. The State of California is a national and global leader in planning for sustainable and resilient communities and these state efforts are already making Fontana more sustainable and resilient. Fontana can build on state and private initiatives to make the city a leader in the Inland Empire, with a resource- and cost-efficient community and government. This will keep Fontana competitive into the 21st century.

In this element, sustainability and resilience is focused especially on resource efficiency and planning for climate change. However, the reality is that sustainability and resilience are broader concepts that are increasingly embedded in a wide range of community values and activities-- health, transportation, land use, open space preservation, and infrastructure—and reflected in the General Plan elements on these topics.

A. Sustainability and Resilience in the Fontana Forward Vision and Principles

- **We have become one of the healthiest and most sustainable cities in San Bernardino County.** We have taken many steps to improve our health indicators, which meet and, increasingly, surpass state averages. Our local infrastructure is resource-efficient and well-maintained. We work with our water and energy providers to establish the highest possible levels of resource conservation and efficiency, and we are working toward becoming a “net-zero energy” city—producing more energy than we consume.

B. GOALS AND POLICIES

| GOALS | POLICIES FOR DECISION MAKERS |
|--|---|
| Fontana is a regional leader in sustainability and resilience with an effective “Sustainable Fontana” program. | <ul style="list-style-type: none"> • Support establishment of a “Sustainable Fontana” program. |
| City government facilities and operations are models of resource efficiency. | <ul style="list-style-type: none"> • Incorporate goals for resource efficiency in municipal facilities and operations into the City Code. • Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste. |
| Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses. | <ul style="list-style-type: none"> • Support measures that permit small-scale wind and solar installations and other renewable options with appropriate regulations. |
| Fontana meets the greenhouse gas reduction goals for 2020 and subsequent goals set by the state. | <ul style="list-style-type: none"> • Continue to collaborate with SANBAG on greenhouse gas inventories and climate action planning. |
| Fontana is a leader in zero net energy development and retrofits. | <ul style="list-style-type: none"> • Promote zero net energy development in Fontana. • Meet or exceed state goals for zero net energy new construction. |

| GOALS | POLICIES FOR DECISION MAKERS |
|---|--|
| Green building techniques are used in new development and retrofits. | <ul style="list-style-type: none"> Promote green building through guidelines, awards and nonfinancial incentives. |
| Fontana is an Inland Empire leader in zero net energy development and retrofits. | <ul style="list-style-type: none"> Meet or exceed state goals for zero net energy new construction. |
| Conservation of water resources with best practices such as drought-tolerant plant species, recycled water, greywater systems, has become a way of life in Fontana. | <ul style="list-style-type: none"> Continue to promote and implement best practices to conserve water. |

C. FINDINGS AND CHALLENGES

Sustainability. A simple definition of sustainability is based on preserving resources for the future: meeting the needs of present generations without compromising the ability of future generations to meet their own needs. The corollaries are to practice resource-efficiency, promote healthy environmental systems and habitats, and support conditions for continued ecosystem services. Ecosystem services are the environmental systems that make continued life possible on earth: provision of water and food; regulating systems, such as flood and disease control; nutrient cycling; and the cultural importance of nature and habitat.



Resilience. Resilience is not only the ability to respond and recover from hazard events. It means that a community is able to anticipate hazards and to reduce overall vulnerability. Resilient communities learn and adapt to changing conditions and risks. Resilient communities anticipate risks; plan to limit their impacts; and use adaptation strategies that integrate all community systems – civic, environmental, social and economic – to support recovery and growth.



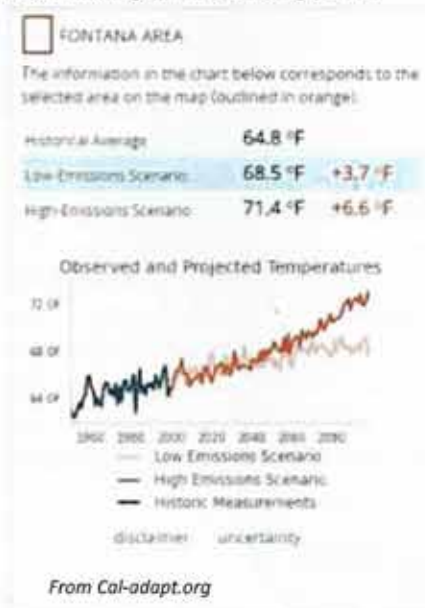
Air quality. Like the rest of California, Fontana has experienced a decline in air pollution but still experiences significant pollution. Sources of air pollution include electric utilities using nonrenewable resources; transportation; buildings; manufacturing processes; natural disasters (such as wildfires); and climate change.

- In the Inland Empire since 2000, fine particulate pollution has declined by about 50 percent; levels of ground-level ozone, (summertime smog), have been reduced by about 35 percent during the same time period.
- However, the Inland Empire still suffers from some of the highest ozone and fine particulate levels in the nation. Prevailing winds typically push smog from the west toward San Bernardino and Riverside counties, where the mountains keep it contained. (Southern California and the San Joaquin Valley are the only regions in the country that do not meet the Clean Air Act standard for ozone. Moreover, California is last in the nation for the number of new trucks on the road that meet 2010 standards.)
- Emissions of a key pollutant, nitrogen oxides, will have to be further reduced by about two-thirds to meet current standards for ground-level ozone.
- Living near to a major road can have been found to have adverse health impacts. A 2010 review of over 700 studies from around the world found that traffic pollution causes asthma attacks in children, and may cause a wide range of other effects including: the onset of childhood asthma, impaired lung function, premature death and death from cardiovascular diseases, and cardiovascular morbidity. The area most affected, they concluded, was roughly 0.2 to 0.3 miles (300 to 500 meters) from the highway. <http://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/highways.html>
- The American Lung Association’s State of the Air 2016 report gave San Bernardino County an F for ozone; and F for 24-hour particle pollution; and a Fail for annual particle pollution. www.stateoftheair.org; for methodology, see <http://www.lung.org/our-initiatives/healthy-air/sota/key-findings/methodology-and-acknowledgements.html>

Climate change. The State of California has an ambitious plan for addressing climate change. It is focusing especially on reducing greenhouse gas emissions to 40% below 1990 levels by 2030 through increasing renewable electricity production to 50%; reducing petroleum use in vehicles by 50%; doubling energy efficiency savings at existing buildings; and other initiatives. Through the California Clean energy Jobs Act (Proposition 39 (K-12) Program), ten FUSD schools received over \$7 million for energy efficiency and solar generation projects.

Fontana will potentially be affected not only by direct climate change impacts within its own borders, but by indirect impacts resulting from changes taking place in the mountains, the deserts, and the coast. The major projected impact of climate change in Fontana is expected to be more heat over longer periods. As an example, by 2070, Riverside is expected to double the annual number of days over 95 degrees by 2070 (from 43 to 82 days, or almost a quarter of the days in a year.) Increasing temperatures can affect Fontana in multiple ways.

- More days of extreme heat increase health risks, especially for vulnerable populations.



- Increased heat also induces higher levels of ground level ozone, resulting in poor air quality with associated health risks.
- Higher temperatures over longer periods will affect the electrical grid. The demand for electricity for air conditioning will grow. Transmission lines lose 7-8 percent of their capacity during heat waves—while the demand is higher. Key transmission corridors in Greater Los Angeles are vulnerable to increased frequency of wildfire.
- Higher temperatures and droughts will reduce snow pack, resulting in less availability of water.
- More and more dangerous wildfires also result from earlier snowmelt, higher temperatures and longer dry periods over a longer fire season. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning.
- Less frequent but more extreme storm events can also result from warmer storms bringing large amounts of moisture from the Pacific Ocean into the state.

[California Climate Change Center, Third Assessment: "Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California"]

Greenhouse Gas Emissions. California law SB 375 focuses on reducing greenhouse gas (GHG) emissions. Greenhouse gases are carbon dioxide, methane, nitrous oxide, perfluorinated carbons, sulfur hexafluoride, and hydrofluorocarbons. The major sources of GHG in Fontana are transportation and buildings: 39% buildings and 51% on-road transportation according to a 2008 SANBAG inventory. Fontana is already reducing GHG through converting lighting to LED and implementing GHG performance standards for new development that are included in state building codes.



- Additional reductions are expected to come from energy savings in wastewater treatment and water conveyance through the IUEA and FWP, utility system upgrades in equipment and infrastructure, and Smart Bus technology implemented by Omnitrans.
- Incorporation of land use strategies from SCAG’s 2016 RTP/SCS this General Plan Update will also help reduce GHG.

California Zero Net Energy Goals. A zero net energy (ZNE) building produces as much energy as it consumes over the course of a year through high levels of energy efficiency and the addition of clean, on-site renewable power generation, typically solar photovoltaic. The Statewide Energy Efficiency Strategic Plan created by the California Public Utilities Commission aims towards a goal of zero net energy for all new residential buildings in 2020 and for all new commercial buildings in 2030. Fontana has the first net zero residential development in California, Meritage, which attracted the attention of the New York Times: (<http://www.nytimes.com/2016/06/04/business/energy-environment/solar-power-energy-efficient-net-zero.html? r=0>)



HIGH EFFICIENCY LIGHTING

All lighting is LED, which is highly efficient. Installation of high quality lighting with controls that automatically dim or extinguish non-essential lights in non-occupied areas.



HIGH PERFORMANCE WALLS

Exterior wall insulation. Design the sun shield over the glass facade during the summer months to act as an air barrier while allowing for passive solar heat gain in the winter. Using water heating, improving insulation and reducing energy consumption.



HIGH PERFORMANCE BTUs

Attics with additional insulation on the roof deck with extra temperatures checked to maintain improving the home's heating and cooling performance. Extra insulation at the roof deck, in addition to the ceiling insulation will reduce the attic temperature by 10 degrees or more during hot summer days.



IMPROVED WATER HEATING SYSTEM EFFICIENCY

Installing tankless water heating technology and better distribution system reduces the energy needed to generate hot water by the home by about 70 percent.

These are cost effective measures that home designers will consider to achieve low levels of efficiency. They can be treated for other efficiency technologies such as higher efficiency HVAC units, higher efficiency water heaters, etc.

Inside a 'zero-energy' home

A San Francisco company is planning to build multifamily townhomes, lofts and apartments that create as much energy as they use. Here is a look at some of the net zero energy methods and materials.



Note: Diagram represents an example of one type of net zero energy building.

Source: Zeta Communities

The Chronicle

D. WHAT THE COMMUNITY SAID

Public opinion survey

- 82% of respondents ranked "Require environmentally-friendly building and development practices" as a high or medium priority for the future.

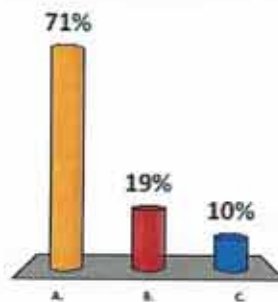
Workshop and meeting input:

- Promote community green building
- Focus on sustainability for the future
- Wi-Fi friendly, walk friendly, bike friendly
- Clean energy usage; greenhouse gas reduction
- Reduce our footprint; focus on healthy community

Workshop keypad polling:

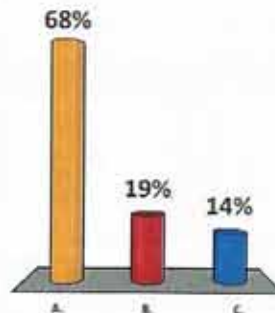
I would like Fontana to be known as a Zero Net Energy community.

- A. Yes
- B. Maybe
- C. No



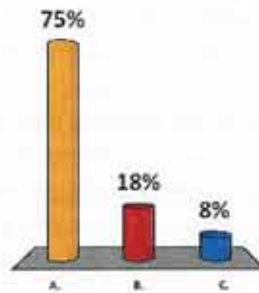
I would like Fontana to meet the greenhouse gas reduction targets in the draft Climate Action Plan.

- A. Yes
- B. Maybe
- C. No



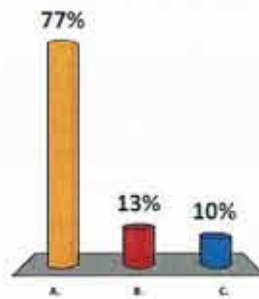
I would like to see a "Sustainable Fontana" program just like we have a "Healthy Fontana" program.

- A. Yes
- B. Maybe
- C. No



I would like Fontana to be known in the region as a leader in sustainability, resilience, and energy efficiency.

- A. Yes
- B. Maybe
- C. No



E. STRATEGIES AND ACTIONS TO ACHIEVE THE GOALS

GOAL 1: FONTANA IS A REGIONAL LEADER IN SUSTAINABILITY AND RESILIENCE WITH AN EFFECTIVE "SUSTAINABLE FONTANA" PROGRAM.

Policy

- Create a Sustainable and Resilient Fontana program that promotes green practices in government and in the community.

STRATEGIES

A. Designate an existing or new staff member to be the Sustainability and Resilience leader in city government to promote interdepartmental sustainability work.

Actions

- i. *Create an interdepartmental committee to develop a framework for Sustainable Fontana.*

B. Establish a "Sustainable Fontana" program to coordinate City government resource-efficiency efforts and promote private initiatives and opportunities. Use the Healthy Fontana model to create a program that provides leadership, information, and programs for residents and businesses. Like the Healthy Fontana program has made Fontana a leader in promoting a healthy community, a Sustainable Fontana will serve as a way to coordinate planning and implementing of sustainability and resilience

across City government and raise awareness among residents and businesses of how they can participate in making Fontana a more resource-efficient community that brings health and economic benefits.

- i. *Develop a list of activities, with metrics, that will be monitored.*
- ii. *Identify grant opportunities for sustainability and resilience activities, including public awareness activities.*
- iii. *Create a webpage for Sustainable Fontana with a dashboard that is updated at least twice a year to show how Fontana is making progress towards meeting the goals*
- iv. *Consider using the STAR communities rating system to identify, validate and support implementation of best practices in some or all of the activities for community sustainability. The STAR system offers the possibility of certification to benchmark progress against national standards and peer cities. More than 40 communities across the nation have become STAR-certified including the City of Riverside (<https://reporting.starcommunities.org/communities/27-riverside-california>)*

The STAR rating system is divided into seven thematic goal areas:

| Built Environment | Climate & Energy | Economy & Jobs | Education, Arts & Community | Equity & Empowerment | Health & Safety | Natural Systems |
|--------------------------------|--|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|-----------------------------|
| Ambient Noise & Light | Climate Adaptation | Business Retention & Development | Arts & Culture | Civic Engagement | Active Living | Green Infrastructure |
| Community Water Systems | Greenhouse Gas Mitigation | Green Market Development | Community Cohesion | Civil & Human Rights | Community Health & Health System | Invasive Species |
| Compact & Complete Communities | Greening the Energy Supply | Local Economy | Educational Opportunity & Attainment | Environmental Justice | Emergency Prevention & Response | Natural Resource Protection |
| Housing Affordability | Industrial Sector Resource Efficiency | Quality Jobs & Living Wages | Historic Preservation | Equitable Services & Access | Food Access & Nutrition | Outdoor Air Quality |
| Infill & Redevelopment | Resource Efficient Buildings | Targeted Industry Development | Social & Cultural Diversity | Human Services | Indoor Air Quality | Water in the Environment |
| Public Spaces | Resource Efficient Public Infrastructure | Workforce Readiness | | Poverty Prevention & Alleviation | Natural & Human Hazards | Working Lands |
| Transportation Choices | Waste Minimization | | | | Safe Communities | |

GOAL 2: GOVERNMENT FACILITIES AND OPERATIONS ARE MODELS OF RESOURCE EFFICIENCY.

Policies:

- Incorporate goals into the City Code for resource efficiency in municipal facilities and operations
- Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste.

STRATEGIES

- A. Form a city government task force to audit all practices for energy and resource efficiency and procurement policies.**

Actions

- i. Create a task force from the interdepartmental Sustainable Fontana program to audit and monitor City of Fontana practices.*

- B. Require that all capital projects be evaluated for resource-efficiency, sustainability and resilience values and give preference to energy efficient design, materials and equipment in public facilities and infrastructure.**

Actions

- i. Use the Envision system described in Element 10 to evaluate capital projects.*
ii. Write RFPs and vendor contracts to give preference to resource-efficient and non-toxic design, materials and equipment.

- C. Expand the use of renewable energy sources for City operations.**

Actions

- i. Install solar wherever possible for City operations*
ii. Purchase renewable energy through the Green Tariff or community solar programs.
iii. Evaluate the potential of a Community Choice Aggregation Program for Fontana (see below).
iv. As vehicles in the city fleet are replaced, use electric, CNG or similarly efficient vehicles.

- D. Establish green procurement policies.**

Actions

- i. Add requirements for resource-efficient and non-toxic procurement policies for the city.*

GOAL 3: RENEWABLE SOURCES OF ENERGY, INCLUDING SOLAR AND WIND, AND OTHER ENERGY-CONSERVATION STRATEGIES ARE AVAILABLE TO CITY HOUSEHOLDS AND BUSINESSES.

Policies:

- Promote renewable energy programs for government, Fontana businesses, and Fontana residences.

STRATEGIES:

- A. Evaluate a Community Choice Aggregation Program for Fontana. With a CCA program, Fontana would buy and sell power, aggregating customers to procure power that is typically less expensive and cleaner than that available from the utility. The utility would continue to manage the grid and bill customers.**
- B. Promote renewable energy options as described in Element 10.**
- C. Ensure that appropriate zoning and design standard regulations are in place as needed to provide for domestic solar and wind installations.**

GOAL 4: FONTANA MEETS THE GREENHOUSE GAS REDUCTION GOALS FOR 2020 AND SUBSEQUENT GOALS SET BY THE STATE.

Policies:

- Continue to collaborate with SANBAG, infrastructure agencies, and utilities on greenhouse gas reduction studies and goals.

STRATEGIES:

- A. Build on baseline research completed for greenhouse gas reduction to set local goals and meet state goals.
- B. Work with regional agencies to meet any future state goals for GHG reductions.

GOAL 5 GREEN BUILDING TECHNIQUES ARE USED IN NEW DEVELOPMENT AND RETROFITS.

Policies:

- Promote green building through guidelines, awards and nonfinancial incentives.

Strategies:

- A. Establish a “cool roofs” program to reduce the urban heat island effect.
- B. Establish an annual award for green development projects, including retrofits, in Fontana.

GOAL 6: FONTANA IS A LEADER IN ZERO NET ENERGY DEVELOPMENT AND RETROFITS.

Policies:

- Promote zero net energy development in Fontana.
- Meet or exceed state goals for zero net energy new construction.

STRATEGIES:

- A. Provide incentives for zero net energy residential and non-residential construction.
- B. Make zero net energy construction a requirement for any new development that requires zoning changes or conditional approvals.

GOAL 7: CONSERVATION OF WATER RESOURCES WITH BEST PRACTICES SUCH AS DROUGHT-TOLERANT PLANT SPECIES, RECYCLED WATER, GREYWATER SYSTEMS, HAS BECOME A WAY OF LIFE IN FONTANA.

Policy

- Continue to promote and implement best practices to conserve water.

STRATEGIES:

- A. See strategies in Element 10.

F. GETTING STARTED

[This section is for early action items that can be done or started within a year or two of adoption of the plan and that are not expensive or require new staff, etc.]

| ACTIONS | RESPONSIBLE PARTY |
|---------|-------------------|
| | |
| | |