

CONSERVATION ELEMENT

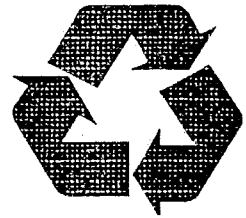
The Conservation Element emphasizes the conservation, development and utilization of resources located within the City of Bellflower. Its intent is to protect and maintain the City's natural and cultural resources and to prevent their wasteful exploitation and destruction. Government Code Section 65302(d) mandates that, to the extent applicable, issues regarding natural resources must be addressed in the general plan.

Summary of findings: As of 1994, over 98 percent of Bellflower's land area was developed. Due to its urbanized nature, Bellflower's conservation issues are related to the protection of ground water reserves; improvement of air quality; source reduction and recycling; energy conservation; preservation and improvement of vegetation; and, the preservation of its historical and cultural heritage.

For detailed information pertaining to Bellflower's conservation issues, please refer to the Background Technical Report (BTR) of the General Plan.

In summary, the conservation issues affecting Bellflower's future are as follows:

- **Water Conservation and Protection:** Water shortages and drought conditions are part of Southern California's climatic cycles. In addition, pollution from mismanaged land uses can threaten Bellflower's groundwater sources.
- **Air Quality:** Bellflower is located in a region which has failed to meet state and federal air quality standards.
- **Recycling:** Excess solid waste is filling our region's landfills; action is needed to reduce and reuse waste.
- **Energy Conservation:** Energy (electricity, natural gas, water, petroleum fuels) is a scarce natural resource which needs to be properly managed and preserved.



"It was a wonderful town, lulled into a peaceful sense of security that was amplified as one listened to the rhythmic beat of the smithy's hammer and the musical chimes of the leaders' bells on the ten horse teams hauling sugar beets to the nearby elevated loading dump"
Margaret Guernsey Taylor, about 1920, Bellflower: People and Places

- **Vegetation:**
Bellflower's public and private vegetation is a valuable resource which should be preserved and enhanced.
 - **Historic Preservation:**
Bellflower's cultural and historical resources are currently not inventoried or actively protected.
-

GOALS AND POLICIES:

The following goals and policies address citywide conservation issues.

ISSUE: Water shortages and drought conditions are part of Southern California's climatic cycles.

ISSUE: Ground water is a scarce resource which is subject to contamination from improperly managed land uses.

GOAL 1: Protect Bellflower's ground water resources from depletion and pollution.

POLICIES:

- 1.1 Require the use of drought tolerant landscapes in new developments and encourage the replacement of existing water consumptive landscapes.
- 1.2 Encourage the use of reclaimed water for irrigation in parks, golf courses, recreation areas, industrial uses, and schools.
- 1.3 Comply with the policies and programs contained in the City's Water Conservation Landscape Ordinance and Water Master Plan.
- 1.4 Cooperate with federal, state and local agencies concerning the maintenance and improvement of the quality and quantity of local and regional groundwater resources.
- 1.5 Properly regulate commercial and industrial land uses to ensure they do not pollute Bellflower's ground water resources.



"We moved to Bellflower in 1911 when I was five. It opened up a vast new world of sights and sounds and smells: horses and cows and goats and pigs and rabbits and turkeys and geese and ducks and chickens and guinea hens . . . in fact every kind of critter you could domesticate and some you couldn't." George Miron, "A Love Affair With the Angels", Bellflower: People and Places.

- 1.6 Participate in and establish programs to increase public awareness of the dangers of water polluting activities such as dumping of oil, fuel and solvents, and excessive fertilization and insecticides.

ISSUE: Bellflower is located in a region which consistently fails to meet state and federal air quality standards.

GOAL 2: Improve air quality.

POLICIES:

- 2.1 Continue to provide alternative modes of transportation such as mass transit, dial-a-ride, rail systems, dedicated roadways, conventional buses.
- 2.2 Encourage increased vehicle occupancy and car pooling. Provide attractive walkways and bike paths. Improve traffic monitoring and metering systems.
- 2.3 Actively participate in regional and local governmental efforts to improve air quality.

- 2.4 Maintain and increase traffic signal synchronization and provisions for constant traffic flow on all major arteries throughout the city and as extensions of other programs of neighboring cities.

- 2.5 Encourage the creation of alternate fuel and energy regeneration stations and repair facilities within the city.

- 2.6 Participate in and establish programs to increase public awareness of the dangers of air polluting activities such as outdoor painting, wood and charcoal barbecues, and pesticide use.

ISSUE: Excess solid waste is filling our region's landfills; source reduction and recycling is needed.

GOAL 3: Reduce Bellflower's solid waste stream.

POLICIES:

- 3.1 Encourage recycling and waste reduction in accordance with



*"In those days (1925), you could walk east on Ramona Street to the (San Gabriel) river, which looked like the Mississippi River in Tom Sawyer's day, except it wasn't as wide."
Margaret Guernsey Taylor, Bellflower: People and Places*

Bellflower's adopted Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE).

ISSUE: Energy (electricity, natural gas, water, petroleum fuels) are scarce natural resources; conservation is necessary.

GOAL 4: Encourage the conservation of energy.

POLICIES:

- 4.1 Ensure the Building Department enforces State energy conservation guidelines which require the incorporation of energy-saving designs and features into new and refurbished buildings.
- 4.2 Assist local utility companies with their public energy conservation education programs.
- 4.3 Encourage residents, businesses, and public employees to follow energy conservation practices designed to reduce energy consumption.

4.4 The City should consider purchasing energy-efficient and environmentally-safe vehicles and machinery.

4.5 The City should streamline its departments' services and permitting mechanisms into "One-Stop Service Centers."

ISSUE: Bellflower's public and private vegetation should be preserved and enhanced.

GOAL 5: Preserve and enhance the quality of the City's landscaped environment.

POLICIES:

- 5.1 Retain and maintain the quality and health of existing landscape in the public open spaces (sidewalks, alleys, parks, civic and cultural facilities, and schools).
- 5.2 Encourage property owners to maintain existing vegetation on developed sites and replace unhealthy or dead landscape.



Bellflower, always a horsy place, highlighted the day's events (4th of July) with a bronco busting contest. R.J. Parsonsons, circa 1920, Bellflower: People and Places

5.3 Encourage developers to incorporate mature and specimen trees and other significant vegetation which may exist on a site into the design of a development project for that site.

5.4 Continue enforcement of the Water Conservation Landscape Ordinance.

5.5 Work with CalTrans to ensure that adequate landscaping is provided along the freeways that traverse the City of Bellflower.

5.6 Ensure that procedures are in place that optimize the useful life of all City owned and maintained trees and plants while ensuring that these trees and plants do not damage the City's infrastructure.

GOAL 6: Identify and encourage the preservation of significant architectural, historical, and cultural resources.**POLICIES:**

6.1 In the downtown area, in particular, encourage the adaptive reuse of buildings and structures of significant historical or cultural value.

6.2 Encourage and provide incentives for the preservation of significant architectural, historical, and cultural buildings.



"At first there were no lights at the Pacific Electric station and people would light matches to signal the engines to stop when it was dark. Circa 1923, Viola Gortikov Sallee, Bellflower: People and Places."

ISSUE: Bellflower's cultural and historical resources should be inventoried and protected.

IMPLEMENTATION PROGRAMS:

1. **IMPLEMENTATION PROGRAM:** Provide information and pamphlets to the public regarding facilities and locations which accept and recycle waste motor oil. Continue to advertise Countywide "Hazardous Waste Roundup" collection events.

2. **IMPLEMENTATION PROGRAM:** Implement the water conservation measures outlined in the "City of Bellflower Water Master Plan (Draft)." August 1994.

3. **IMPLEMENTATION PROGRAM:** Continue to work with local agencies, the Central Basin Municipal Water District and the Central West Basin Replenishment District regarding the clean-up of the San Gabriel Valley Groundwater Basin.

4. **IMPLEMENTATION PROGRAM:** Adopt local, regional, and state planning mechanisms which result in reduced traffic congestion and improved air quality.

5. **IMPLEMENTATION PROGRAM:** Promote recycling by providing information on recycling, including locations of centers and a list of items that can be recycled.

6. **IMPLEMENTATION PROGRAM:** Conduct energy audits on all City facilities and incorporate measures to increase their energy efficiency.

7. **IMPLEMENTATION PROGRAM:** Provide incentives for the installation of energy conservation measures in existing buildings characterized by high levels of energy consumption, including technical assistance and low-interest loans.



"Ardmore was unpaved, and one of my jobs was to go and get milk every evening from a place near Palm Street. In the summer it was fun to squish the warm dirt up between your toes while you walked." Viola Gortikov Sallee, about 1923, Bellflower: People and Places.

8. **IMPLEMENTATION PROGRAM:** Compile a vendor's list of environmentally sensitive products and services for use and purchase by the City.
9. **IMPLEMENTATION PROGRAM:** Institute an "One-Stop-Payment Center" where residents can pay their utility bills (water, gas, electric, and cable television); this is done to reduce vehicle trips and conserve energy.
10. **IMPLEMENTATION PROGRAM:** Prepare a "Master Tree Planting and Maintenance Plan" which outlines the appropriate species, planting locations, and procedures for placement of trees within public right-of-ways and at City-owned facilities.
11. **IMPLEMENTATION PROGRAM:** Prepare informational pamphlets for public distribution that describe water saving irrigation practices; a list of drought-resistant plants; and, resources for low water gardening; and gray water recycling systems.
12. **IMPLEMENTATION PROGRAM:** Enforce the Municipal Code regarding the poor maintenance of private property and vegetation. Where necessary, utilize the City's code enforcement mechanisms to ensure compliance.
13. **IMPLEMENTATION PROGRAM:** Compile and maintain a current inventory of architectural, cultural, and historical resources in Bellflower. These buildings and landmarks include but are not limited to: Heritage Square, the Pacific Electric Railway Depot building, the Carpenter House, the Gerard House (Walnut Street); and numerous buildings in the downtown area. This action is done to facilitate the application for grants and funding for rehabilitation and improvement of these properties.



"The San Gabriel River flowed the year round. Artesian wells gave of their abundance beyond the River, particularly southeast of downtown Bellflower. Large ponds were formed there which swarmed with superperch." George Miron, "A Love Affair with the Angels," Bellflower: People and Places.

14. **IMPLEMENTATION PROGRAM:**

Continue working with the Southern Pacific Railroad to ensure the Pacific Electric Railway Depot building is maintained and preserved.

15. **IMPLEMENTATION PROGRAM:**

Support and continue cultural events, such as the Bellflower Symphony Orchestra, Community Concert Association, Civic Chorus, Art Association, Carpenter House Museum, Friends of the Library, Heritage Society, weekly Farmer's Market and other programs.

16. **IMPLEMENTATION PROGRAM:**

Utilize economic incentives, such as facade rebate programs and low interest loans, to facilitate the architectural renovation of the downtown area. In particular, efforts should be made to restore architecturally-significant buildings to their original design.



"Mr. Guernsey recounts that Bellflower's pioneers had to travel to Los Angeles for ice. The Pacific Red cars were the chief mode of transport to the city, and Guernsey's father and uncle "lugged it home wrapped in an abundance of newsprint and burlap bags"..." Bruce A. Guernsey, Bellflower: People and Places.

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CONSERVATION ELEMENT

1.0 INTRODUCTION

The Conservation Element emphasizes the conservation, development and utilization of resources located within the City of Bellflower. Its intent is to protect and maintain the City's natural and cultural resources and to prevent their wasteful exploitation and destruction. Government Code Section 65302(d) mandates that, to the extent applicable, issues regarding natural resources must be addressed in the general plan. Resources considered in this section include water, soils, biotic, cultural, air, energy, and other natural resources.

1.1 CITY OF BELLFLOWER CONSERVATION ISSUES

During 1994 study sessions held with City staff and the General Plan Ad Hoc Committee, the following Bellflower-specific conservation issues were identified:

- **Water Conservation and Protection:** Water shortages and drought conditions are part of Southern California's climatic cycles. In addition, pollution resulting from the mismanagement of land uses can threaten Bellflower's groundwater resources.
- **Recycling:** Excess solid waste is filling our region's landfills; action is needed to reduce and reuse waste.
- **Air Quality:** Bellflower is located in a region which has failed to meet state and federal air quality standards.
- **Energy Conservation:** Energy (electricity, natural gas, water, petroleum fuels) are scarce natural resources which need to be properly managed and preserved.

With the exception of solid waste and hazardous waste management, the above-described issues and relevant technical data are analyzed in this document and the General Plan's policy document.

The issues of solid waste management and recycling are thoroughly addressed in the City's adopted Source Reduction and Recycling Element (January, 1992). Information pertaining to hazardous waste management is contained in the County of Los Angeles' Hazardous Waste Management Element which the City adopted by resolution during 1990. These two elements commit the City to a series of actions and programs to meet waste generation and management requirements imposed on all local jurisdictions.

Other documents which contain important technical information relating to conservation issues include: the "City of Bellflower Water Master Plan (Draft)", dated August 1994 ; the "1991 South Coast Air Quality Management Plan" (AQMP), South Coast Air Quality Management District; the "Los Angeles County Drainage Area Review", U.S. Army Corps of Engineers, dated June 1992; and, the City of Bellflower "Water Conservation Landscape Ordinance", Ord.#796, dated December 14, 1992.

2.0 RESOURCES AND THEIR MANAGEMENT

The Conservation Element supports the City's Land Use Element by integrating its goals and policies with other City and County General Plan Elements. Conservation of natural resources should be a leading determinant for land use relationships, housing, water, and waste management facilities. The major goal to protect our natural resources is directed at restoration and protection of the quality of the City's physical environment, natural and man-made, through conserving plant and animal life, air quality, rivers, and natural water courses.

2.1 Water Resources

The importance of water as a resource must be approached in terms of its quality and quantity, sources of supply, uses, potential for destruction as well as sustenance, and how it is supplied to its users. This section of the conservation element deals with the sources, quantity and quality of water resources for the Bellflower area. Additional information pertaining to Bellflower's water purveyors and supply infrastructure is provided in the Circulation Element and the "City of Bellflower Water Master Plan", dated August 1994.

2.1.1 Water Sources & Quantity

As of August 1994, water service was provided to Bellflower residents and businesses by six (6) local water companies. There are three mutual water companies: Bellflower-Somerset Mutual Water Company, Bellflower Home Garden Water Company, and Bigby Townsite Water Company. The three remaining water companies are private: County Water Company, Park Water Company, and Peerless Water Company.

A combination of groundwater and Metropolitan Water District of Southern California (MWDSC) water is supplied by these six water purveyors. According to the "City of Bellflower Water Master Plan (Draft)", dated August 1994, over 40 percent of the water used by Bellflower is obtained from the MWDSC while the remaining 60 percent is groundwater.¹

The Water Replenishment District of Southern California (WRDSC) manages the area which includes Bellflower's water basin. It monitors pumping and purchases, and recharges MWDSC water into the basin. The Central Basin Municipal Water District (CBMWD) is the MWDSC member agency wholesaling imported water to Bellflower's retail water purveyors. CBMWD has developed an extensive reclaimed water transmission and distribution system and it distributes reclaimed water from the Los Angeles Sanitation District's sewage treatment plants to several water purveyors in the Bellflower area.

The City of Bellflower does not provide water directly to end water users (except Caruthers Park) but it does purchase MWDSC water through CBMWD and delivers it, directly or indirectly, to most of the water companies in Bellflower. The City also provides fire service and backup service for areas within the City.

¹"City of Bellflower Water Master Plan (Draft)", August 1994, page 8-1.

2.1.2 Water Quality and Uses

The Federal Safe Drinking Water Act of 1974 and its 1986 amendments are intended to ensure the quality of our water supplies. The federal government, through the U.S. Environmental Protection Agency (EPA), sets standards and monitoring requirements for water utilities. California, through its Department of Health Services, has the option of adopting the federal standards or setting more stringent ones. These standards are set after considerable research and data gathering as well as analysis by health experts.

There are nearly 50 standards in California for compounds that may be found in drinking water and more standards are expected in the next few years.

Testing of the domestic water supply is performed by each water company for various constituents, substances and physical agents which the federal or state government has determined allowable maximum contaminant levels. Bellflower-Somerset Mutual Water Company tests quarterly to monitor radioactivity and chemicals. The Company also performs weekly tests which measure residual chlorine, pathogenic (disease-causing) bacteria, and examine the odor and clarity. Park Water Company performs various tests at varying times of the year. Bacteriology is tested daily, organic chemicals are tested quarterly, radionuclides every nine months and both trace metals and inorganic chemicals are tested once every three years. Bellflower Home Garden Water Company tests the three wells it uses twice monthly for all contaminants.

Results of all laboratory water quality tests conducted by Bellflower-Somerset Mutual Water Company, Park Water Company, Bellflower Home Garden and Peerless Water Company confirm that potable water received by the customers within the City of Bellflower meets all federal and state primary (health-related) and secondary (aesthetic) drinking water quality requirements.

Los Angeles County, on behalf of the Regional Water Quality Control Board, monitors the water quality of storm drainage runoff water from various locations. The storm drainage runoff from Bellflower is monitored at the Los Cerritos Channel Station No. F279C-R on Stearns Street in Long Beach. The water quality tests performed on the runoff water indicate that this water does not exceed the maximum contaminant levels established by the U.S. EPA for potable water. Although there are constituents which exceeded MCL such as iron, zinc, total coliform and fecal coliform, this water is not used for human consumption and is therefore untreated.

Los Angeles County Public Works officials are responsible for assisting cities required to comply with the National Pollutant Discharge Elimination System (NPDES) permit process. Bellflower is one of the Phase 3 cities required to comply with this Federal legislation. To comply, the City prepared documentation on City drainage area boundaries, annual rain fall, existing water quality, existing water flow patterns, existing storm water management practices, and has established a storm water runoff monitoring program. This Federal legislation was passed without the provision of funding for local government implementation.

2.1.3 Flood Control

The San Gabriel River, once a source for irrigation in Bellflower, running north to south from the San Gabriel Mountains to the Pacific Ocean, is now a vast concrete-lined flood control channel maintained by the Los Angeles County Flood Control District.

Storm waters are usually the resulting cause of soil erosion. If not checked through a series of flood channels and storm drains, serious problems could develop and precious land would be washed away to the ocean. In Bellflower the San Gabriel River flood control channel and the City's storm drain system (which is controlled by the Los Angeles County and the U.S. Army Corps of Engineers) are adequate to handle a 100-year flood hazard.

Potential flood hazards exist due to inadequacies in the Los Angeles River Flood Control Channel, 3 miles west of the City, and the Rio Hondo River Channel to the north. These hazards are discussed in detail in the Public Health & Safety Section, Safety & Seismic Safety Element, and the document entitled, the "Los Angeles County Drainage Area Review", U.S. Army Corps of Engineers, dated June 1992.

2.1.4 San Gabriel Valley Groundwater Basin

The City of Bellflower's groundwater source (the Central Groundwater Basin) is affected by contaminants contained in the San Gabriel Valley Groundwater Basin. The San Gabriel Valley Groundwater Basin is the site of the largest plume of groundwater contamination in the country. The United States Environmental Protection Agency (EPA) has spent over ten years studying the Basin's contamination and has yet to take any significant action to prevent the migration of contamination to the Central Groundwater Basin which is a source of groundwater for the Central Basin Municipal Water District and the West Basin Water Replenishment District.

Detailed information pertaining to contamination of the San Gabriel Valley Groundwater Basin has been examined in numerous studies published by the U.S. Environmental Protection Agency (EPA) during the past decade.

2.2 Biotic Resources

2.2.1 Flora

The City of Bellflower contains biological resources typical of the urban areas of Southern California. All significant original native chaparral and grassland vegetation has been removed from the area over the years. These and their associated wildlife have long since been replaced by ornamental planting, which include a variety of tree species.

Bellflower was a vast rural area during the 1930's and 1940's, primarily known for its agricultural production. In that respect, natural grasslands and other flora were destroyed by farming of these crops. Development of this rural area into an urban society necessitated large amounts of soils to be removed in order to pave the way for housing sites, streets, and other public improvements.

2.2.2 Fauna

Only a few vacant parcels exist in the 6.1 square mile city. These lots are utilized by animal species which have adapted to highly disturbed and urbanized environments. Typical species include the following:

- Side-blotched lizard (*Uta stansburiana*)
- Western Fence Lizard (*Sceloporus occidentalis*)
- Bonaparte's Gull (*Larus philadelphia*)
- California Gull (*Larus californicus*)

Rock Dove (*Columba livia*)
Mourning Dove (*Zenaida macroura*)
American Crow (*Corvus brachyrhynchos*)
Northern Mockingbird (*Mimus polyglottos*)
Lark Sparrow (*Chondestes grammacus*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
House Sparrow (*Passer domesticus*)
European Starling (*Sturnus vulgaris*)
Virginia Opossum (*Didelphis virginiana*)
California Ground Squirrel (*Spermophilus beecheyi*)
Botta's Pocket Gopher (*Thomomys bottae*)
House Mouse (*Mus musculus*)
Domesticated horses, dogs, and cats.

2.3 Soils

Soil erosion is practically non-existent in Bellflower due to its topography, which is relatively flat having less than a two-percent slope. A flood control channel bounds the City on the east and the vast network of storm drains serves to carry off storm waters which are a prime source of soil erosion.

Most of the City of Bellflower is covered by a blanket of soil which varies in thickness from 0 to 30 feet and consists of poorly compacted clay and sandy silts. Recent alluvium consists of weathered, unconsolidated, poorly sorted, and crudely stratified gravels, sand, silts, and clay. Soil composition is further discussed in the Safety Element.

Urbanization in the Bellflower area has brought about the decline of agricultural activities. An agricultural history that included the production of dairy products, beets and grains has given way to the economic pressures of urban development. A very small portion of open lands still remains within the eastern end of the planning area, which is designated for agricultural/equestrian uses.

2.4 Cultural and Historic Resources

Cultural resources can be regarded as symbols of a people and their civilization. These symbols can represent human activity in pre-history as well as the present. Cultural resources can provide a sense of place, and history, and a sense of pride for residents of a region.

Although no archaeological or paleontological sites have been discovered in the City of Bellflower's planning area, buildings which have historical importance may be identified within the City. The City recognizes the importance of preserving cultural and historical resources as a link to the past. In particular, numerous buildings and landmarks in Bellflower's downtown area are historically and culturally significant. These include, but are not limited to: Heritage Square, the Pacific Electric Railway Depot building, the Carpenter House, the Gerard House (Walnut Street) and numerous others. Most of Bellflower's older downtown buildings (pre-1929) have undergone exterior revisions which have changed their original design and character. Fortunately, in many cases, these buildings' architectural treatments still exist under layers of paint or false facades.

For additional information on Bellflower historical beginnings, please refer to "BELLFLOWER: A Pictorial Essay" (Bellflower Heritage Committee, 1982); and "BELLFLOWER: People & Places" (Bellflower Heritage Committee, 1987).

The Los Angeles Basin has a rich cultural history that includes the initial European explorers and endemic Amerindians, colonization by Spain, land grants, Mexican settlers and missions, and ultimate possession by the United States in 1846.

Migration of settlers to the Los Angeles Basin and the planning area began in earnest following development of the railroad to the southwest. Development of the Bellflower area was initially limited to agricultural production of beets, grains and dairy products.

Bellflower Boulevard (Somerset Avenue) was originally laid out in 1906 with the location of buildings along the Town Center set in the early 1920s. A business boom in the early thirties expanded the community boundary to Artesia Boulevard and in 1957 the City was incorporated.

Increasing demand for affordable housing has resulted in rapid residential housing expansion. This residential expansion and associated commercial development has placed development pressure on landmark sites which may have played a role in Bellflower's history.

Although there are no sites currently listed on the State or Federal Registers of Historic Places, Bellflower contains a number of structures worthy of consideration. Many original structures which were constructed before the City's incorporation still exist and should be preserved.

2.5 Regional and Local Air Quality

The City of Bellflower is located in the South Coast Air Basin. The South Coast Air Quality Management District (SCAQMD) samples ambient air at 30 monitoring stations in the Basin. The closest monitoring station to Bellflower is located in Long Beach. The South Coast Air Basin currently does not comply with the Federal Clean Air Act standards for ambient air quality. As a result, the SCAQMD and SCAG adopted a plan (the Air Quality Management Plan (AQMP) on March 17, 1989 aimed at bringing the region into compliance with the National Ambient Air Quality Standards (NAAQS) by December 31, 2007. The 1989 AQMP was revised in 1991 to incorporate the standards of the California Clean Air Act (CCAA). The CCAA became effective on January 1, 1989 and is generally more stringent than the Federal Clean Air Act. The 1991 AQMP Revision was adopted by the Governing Board of the SCAQMD in July 1991. The Plan has 123 recommended control measures categorized into three technological tiers, based upon their readiness for implementation.

Contaminant levels in air samples are compared to national and state standards to determine air quality. These standards are set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) at levels to protect public health and welfare with an adequate margin of safety. There are national and state standards for ozone, carbon monoxide, nitrogen dioxide, PM10 (suspended particulate matter 10 microns or less in diameter), sulfur dioxide, and lead. The SCAQMD also measures for compliance with two other state standards: sulfate and visibility.

2.5.1 Air Pollution

Both the State of California and the Federal Government have established health based standards for six air pollutants. These pollutants include carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead and fine particulate matter (PM10). The most critical pollutants in terms of health effects are described below:

Carbon Monoxide (CO) Carbon monoxide is an odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the blood stream where it interferes with the transfer of oxygen to body tissues.

Ozone Ozone is a pungent, colorless gas that is typical in southern California smog. The major effects of "oxidants" are visibility reduction, vegetation damage, aggravation of respiratory diseases and eye irritation. Peak ozone concentrations result in reduced lung function, particularly during physical activity. This effect is acute in the sick, elderly and young children. Ozone levels peak during the summer and early fall months.

Particulate Matter Particulate matter (PM10) is small suspended particulate matter. Particulate matter may carry carcinogens and other toxic compounds. Human lungs are unable to filter this matter because of its small size. PM10 can be carried to other organs once it enters the body through the lungs.

Nitrogen Oxides (NOx) Nitrogen oxide is an irritating gas that may increase the susceptibility of individuals to infection and may constrict the airways of asthmatics.

The most significant gas affecting Southeast Los Angeles County's and Bellflower's air quality is carbon monoxide (CO). This gas is a primary pollutant in that it can directly be damaging. About 70 percent of Southeast Los Angeles County's carbon monoxide comes from the incomplete combustion of gasoline by motor vehicles. State and federal controls on new cars are designed to limit carbon monoxide.

Reactive Organic Gases (ROG) is a by-product of incomplete combustion of fuel and organic waste material. ROG is also emitted to the atmosphere when paints, inks, solvents and gasoline evaporate. Rules regulating reformulation of gasoline in order to reduce emissions of reactive gases will be implemented by the California Air Resources Board (CARB) through the year 2000. Like CO, ROG is also a precursor to the formation of ozone, or smog.

2.5.2 Photochemical Smog-Ozone

Ozone--or photochemical smog--is a relatively new kind of air pollution. It results from a chemical reaction which takes place in the atmosphere between nitrogen dioxide and reactive organic gases under the influence of sunshine. Various factors affect this process, including the quantity of gases present, the volume of air available for dilution, the temperature and the amount of sunshine. Ideal conditions occur in the fall on warm, windless, sunny days, and this is when we most frequently experience smog conditions. The largest fraction of photochemical smog is ozone (O₃).

The greatest source of the gases that trigger photochemical smog is the automobile. In the South Coast Air Basin (SoCAB), about 58 percent of the nitrogen oxides come from cars and trucks. The State's automobile control program has already succeeded in making a substantial reduction, with more progress expected through the decade.

2.5.3 Topography and Weather

Bellflower is located in the Southern California Air Basin (SoCAB) which includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside counties. The unique topographic and climatic conditions in the basin impact air quality. The basin is

surrounded by the San Gabriel, San Bernardino, San Geronimo and San Jacinto mountains. The topography results in the potential for trapping and accumulation of air pollutants in the air basin.

While contaminants are emitted at a fairly constant rate throughout the year, pollution concentrations fluctuate depending on weather.

The amount of air available to dilute pollutants depends primarily on two factors: the horizontal airflow and the vertical mixing. Vertical mixing is severely limited by temperature inversions. The important effect of a temperature inversion is to prevent pollutants from rising and being diluted vertically. Thus inversions trap pollutants in the lower layer of air where people breathe.

Normally the atmosphere's temperature decreases with altitude. During an inversion, warmer air lies above a layer of cooler air. The strong inversions typical of our summers are caused by downward vertical motion, called subsidence, which compresses and heats the air. The surface inversions typical of winter are formed by radiation as air is cooled in contact with the earth's cold surface at night. Both types of inversion mechanism may operate at any time of the year, and in the fall both may combine to produce our heaviest pollution.

The other major factor influencing pollutant dispersion is horizontal airflow, which is measured by wind speed. Wind direction is a major factor in alleviating air pollutant concentrations. Wind direction reversals can cause pollutants to drift back and forth beneath the inversion as winds shift.

2.6 Solid Waste Disposal

2.6.1 Source Reduction and Recycling Element (SRR)

In 1991, the Legislature passed the California Integrated Waste Management Act, AB 939. AB 939 requires all cities to reduce the amount of solid waste generated within their boundaries by 25% in year 1995 and by 50% in year 2000.

In response to AB 939, twenty-two southeast-area cities joined the City of Bellflower to form a working group of consultants and representatives from the Sanitation District and County. The purpose of this group was to prepare a plan to achieve the solid waste reduction goals mandated by AB 939. The result, "The City of Bellflower Source Reduction and Recycling (SRR) and Household Hazardous Waste (HHW) Elements", will become part of the Countywide siting element that was submitted to the California Integrated Waste Management Board (CIWMB) for final approval.

The Source Reduction and Recycling Element outlines and emphasizes the implementation of all feasible source reduction, recycling, and composting programs. The Element also identifies the amount of landfill and transformation (incineration) capacity that will be needed for solid waste which cannot be recycled, reduced, or composted.

The City's SRR Element consists of the following ten components and appendices:

- a. Solid Waste Generation Study and Analysis
- b. Source Reduction
- c. Recycling
- d. Composting
- e. Solid Waste Facility Capacity
- f. Education and Public Information
- g. Funding
- h. Special Waste
- i. Integration

Solid Waste Generation Study Component

The City of Bellflower contracts with two commercial franchised haulers to dispose of its solid waste. Calsan, Incorporated, exclusively collects all residential waste in the City. CalBin, Incorporated, collects all commercially generated waste. Waste collected by these two haulers is taken to three area landfills: Puente Hills, Spadra, and BKK. These facilities are located within 15 minutes of Bellflower.

According to the SRR, as of December 1991, the City of Bellflower generated 72,353 tons of residential, commercial, and industrial solid waste per year. Of this amount (after recycling,

composting, etc) 65,066 tons of the City's solid waste is disposed of yearly. The City's level of solid waste diversion equals approximately 10.1 percent of the current solid waste generation.

Bellflower's refuse comes from three primary sources; residential (32%), commercial (42%), and industrial 26%). During the past decade, the County is rapidly depleting the permitted capacity of its existing landfills. With no future landfill expansion or establishment of new landfills, existing County landfill capacity is expected to be exhausted within the next decade.

Source Reduction Component

Source reduction simply means producing less waste. Some examples of existing source reduction activities occurring in Bellflower include repair of appliances, furniture, and household item donation, the use of diaper services, and backyard composting.

Total diversion, as a result of identified source reduction activities, is 7,287 tons per year, or 10.1 percent of the City's current waste generation rate. The City's "Source Reduction and Recycling Element and Household Hazardous Waste Element" examines source reduction programs, most of which include public information and education programs. Because source reduction alternatives are generally inexpensive, educational, and successful, the City plans to implement these programs within the short term period of the Element's implementation schedule. Other source reduction programs, such as modifying collection rates (determining how much is placed at the curb, the more generated, the greater the monthly fee), may also have an impressive impact on the waste reduction.

Recycling Component

Existing recycling activities within the City of Bellflower include a City Hall paper recovery program, buyback center, business recycling, material salvage by commercial haulers, and routine cardboard recycling by grocery stores, and other major businesses.

To increase recycling, the City plans to encourage the private sector to expand existing programs. In addition, the City will explore supplemental approaches to transformation and ash recycling.

Composting Component

Yard waste and readily decomposable material comprise a significant portion the City total waste stream. The City has targeted yard waste for future voluntary composting programs. Yard waste includes grass, leaves, and pruning.

Special Waste Component

Special waste includes difficult-to-handle materials such as tires, construction debris, white goods, sofas, mattresses, and potentially hazardous wastes such as sewage, sludge, asbestos, auto bodies, or ash. Alternatives were analyzed in the Element, all of which are primarily oriented toward the private sector.

Education and Public Information Component

Based on the Element's generators and targeted materials, a number of new programs were selected for implementation that target the residential sector, commercial/industrial sector, and schools.

Household Hazardous Waste Element

Household hazardous wastes are any household discarded materials that may threaten human health or the environment if disposed of improperly. The City has implemented a program to handle household hazardous waste (HHW) with Ordinance 454. The ordinance has been implemented as an ongoing program for the effective and proper handling and disposal of materials that are considered hazardous.

The City will continue to participate in the periodic roundup events sponsored by LACSD and the Los Angeles County DPW until the permanent County program is in place. The City will also participate in the County program, which will use mobile collection facilities for regularly-scheduled collection events. The load-checking programs will continue at all landfills used by the City. There is no capital investment by the City for participation in the County programs. The County will completely fund the permanent program and recover costs through a surcharge on the fees at all landfills in the County.

2.7 Energy Resources

Energy issues impact a wide range of daily activities. This includes the more obvious uses of energy for transporting, heating, cooling, and lighting. The use of energy is also affected by local climatological conditions. The City of Bellflower enjoys a mild climate with summer temperatures averaging 79° and winter temperatures averaging 67°. Prevailing winds are southwest in the summer and northwest in the winter, with a mean hourly speed of 6.5 miles per hour. Average annual rainfall is 15 inches of precipitation.

A number of goals and policies in various general plan elements address energy issues both directly and indirectly. The goal of a jobs/housing balance in the Land Use Element will reduce commuter travel. Circulation goals and policies seek to reduced reliance on the automobile as the chief means of transportation.

Policies in this element attempt to conserve energy by reducing the waste and excessive use of natural gas, electricity and water. This wide-ranging approach to energy conservation will help to reduce the energy budget of Bellflower's citizens.

All traditional energy resources consumed by land uses of the City are imported. There are no wells producing oil or natural gas, coal deposits, refineries and processing facilities, or generating stations within the City of Bellflower. Natural gas is imported by the Southern California Gas Company from its interstate system. Electrical energy is accessed by transmission and distribution lines from the substation, owned by Southern California Edison Company, located near Ramona Avenue west of Lakewood Boulevard.

Energy conservation is important in preserving non-renewable energy resources to ensure that these resources are available to future generations. There are a number of benefits associated with energy conservation such as improved air quality, reduction of energy costs and waste stream reduction.

As has been clearly demonstrated in recent years, these non-renewable sources of energy are extremely limited, and have been wastefully consumed. Sprawling urban development which necessitates extensive automotive travel consumes vast quantities of oil and gasoline. Structures with large areas of exposed glass require extensive air conditioning in the summer and heating in the winter.

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