4.0

OPEN SPACE AND CONSERVATION ELEMENT

4.1 INTRODUCTION

The City of Delano is currently in a transitional stage of growth from a small, semi-rural town to a medium-sized urbanized community. The City of Delano and its planning area have a number of valuable resources, including those of biological and cultural significance. Delano's unique environment affords the city the opportunity to encourage development while at the same time promoting the wise management of resources and open space for the benefit of the citizens of the community.

The Open Space and Conservation Element is intended to identify natural and man-made resources within the city, as well as to aid in the development of policies and implementation programs that will encourage the conservation, protection, and proper management of these resources. By identifying and encouraging the proper management of the community's resources, the city can assure their continual availability, appreciation, and enjoyment.

4.2 AUTHORIZATION

State legislation requires the inclusion of an Open Space Element (Government Code Section 65302(c)) and a Conservation Element (Government Code Section 65302(d)) in all local government general plans.

State legislation (Government Code Section 65561) declares that the preservation of open space land is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of land for the production of food and fiber, for the enjoyment of scenic beauty, for recreation, and for the use of natural resources. The legislation further mandates that cities, as well as counties and the state, make definite plans for the preservation of valuable open-space land and take positive action to carry out such plans by the adoption and strict administration of laws, ordinances, rules, and regulations.

Land designated as open space may be utilized for the preservation of natural resources, including plant and animal life, as well as waterways. The designation of open space is also required for the managed production of resources including agricultural lands, areas required for recharge of

groundwater basins, and areas containing major mineral deposits. Open space may also be used for outdoor recreation. Open space for public health and safety purposes may include areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, floodplains, watersheds, and areas required for the protection o water and air quality.

State legislation requires a Conservation Element for the conservation, development, and utilization of natural resources. Significant resources may include waterways, agricultural soils, wildlife, minerals, energy and air resources, cultural resources, and other natural assets. The Conservation Element may further cover the prevention, control, and correction of soil erosion, the prevention and conservation of watersheds, and flood control conservation methods to protect land in stream channel areas.

ENVIRONMENTAL SETTING

4.3 EARTH

4.3.1 Project Location and Description

The City of Delano is located within the northwestern portion of Kern County, thirty-two miles north of Bakersfield, and 70 miles South of Fresno, California. The City is located in the southern portion of California's agriculturally rich San Joaquin Valley, ten miles from the western foothills of the Sierra Nevada Mountain Range and approximately twenty-five miles from the Coast Range to the west. The natural resources and gentle topography of Delano has made it hospitable to agriculture.

The City has surrounded by productive farmland and is known for production of table grapes, almonds, and citrus. The Southern Sierra Nevada Mountain range is situated approximately 25 nautical air miles to the east. Recreational areas located nearby include Lake Isabella and the Sequoia National Park and Forest.

4.3.2 Topography

Delano is situated in the San Joaquin Valley. The topography of this portion of Kern County is typical of the relatively flat gradient encountered throughout the San Joaquin Valley, with uniform east to west trending slopes of about three to ten feet per mile. The average elevation of Delano is 300-325 feet above sea level.

4.3.3 Geology

Setting and History - The San Joaquin Valley is a structural trough, whose main axis trends northwest-southeast. The San Joaquin Valley is bordered on the east by the granitic complex of the Sierra Nevada and on the west by the folded and faulted sedimentary, volcanic, and metamorphic rocks of the Coast Range. The relatively flat floor of the San Joaquin Valley overlies thousands of feet of alluvial, lacustrine and marine deposits that have accumulated in the valley as the trough has been lowered and the adjacent mountains have been elevated.

Throughout Late Cretaceous and much of Tertiary time, the San Joaquin Valley was the site of marine deposition, and thousands of feet of shallow-water marine sediments were deposited in this geosyncline. Presently overlying these marine sedimentary deposits are continental deposits of late Tertiary and Quaternary age. In aggregate, these marine and continental deposits form an immense wedge, which thickens from east to west and from north to south. The continental deposits have been tilted to the west and down warped, and their base is now several hundred to many thousand feet below sea level.

The low alluvial plains and fans in the Valley floor are relatively flat and featureless, occupying most of the floor's area. The extensive fans along the eastern margin of the Valley contain high proportions of well-sorted gravel and sand, while the interstream areas between the fans are underlain by poorly sorted, fine-grained fluvial sediment deposited by intermittent streams.

4.3.4 Earthquakes and Related Effects

Although no faults have been mapped immediately near Delano, several major faults can be found in Kern County. These include the San Andreas Fault, the Garlock Fault, the Sierra Nevada Fault and the Kern Canyon Fault. Most of the earthquake epicenters and faults are located in eastern and southwestern Kern County. The City's mild topography and low elevation negate threats of landslides, liquefaction, settlement or other seismically-related hazards. Numerous canals, levees and other earthen water containment structures within and near the City pose potential flooding hazards to property and residents of Delano. This is discussed in greater detail in the Hydrological Conditions Section.

4.3.5 Soils

Agricultural soil capacity is classified according to a number of criteria including prime farmland, farmland of statewide importance and unique farmlands. The U.S. Department of Agriculture Soil Conservation Service defines these farmlands as:

> **Prime farmland** is land best suited for producing seed, feed, forage, fiber, and oilseed crops and also available for these uses (the land could be cropland, pasture land, rangeland, forest land or other land but not urban built-up land or water). It has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods.

Farmland of statewide importance is land other than prime farmland that has a good combination of physical and chemical characteristics for production of food, feed, forage, fiber and oilseed crops available for these uses (the land could be cropland, pasture range land forest land or other land, but not urban built-up land or water).

Unique farmland is land other than prime and farmlands of statewide importance that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. Examples of such crops are citrus, olives, cranberries, fruit and vegetables.

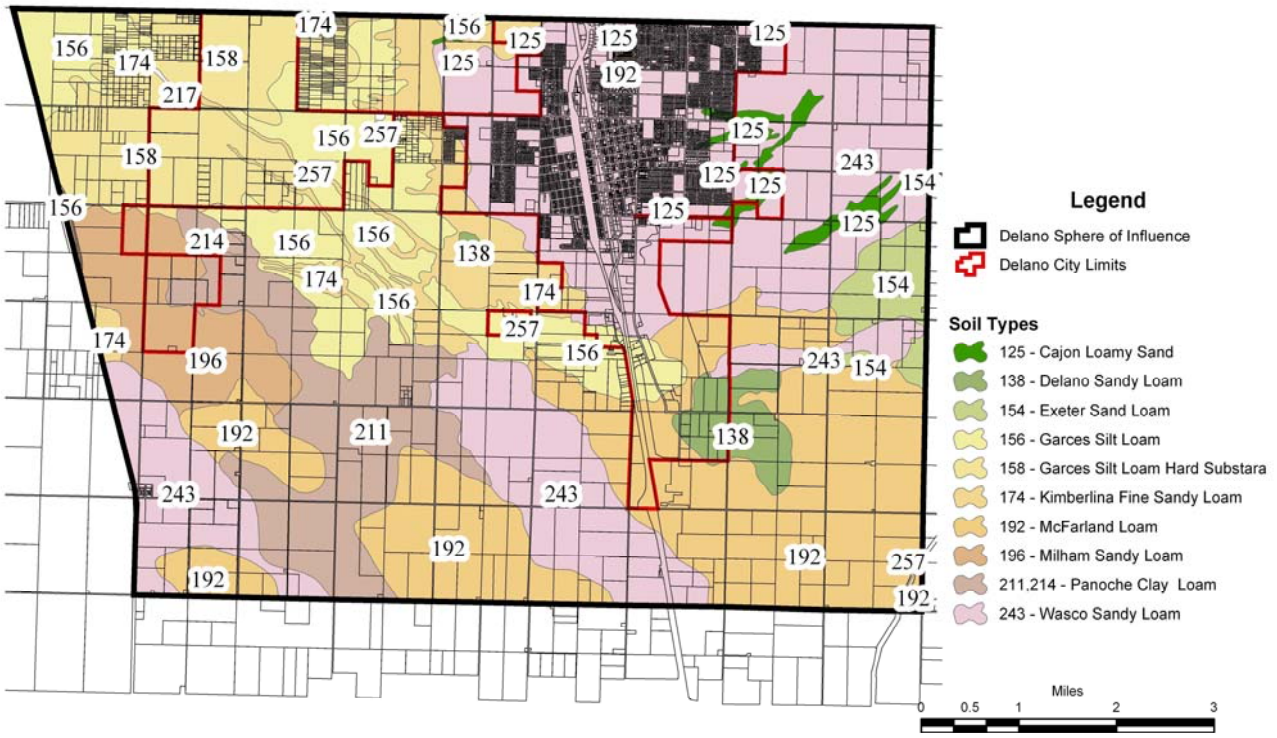
As described by the U.S. Soil Conservation Service, the soils of the Delano area fall primarily into the associations shown on Table 4-1. Figure 4-1 shows the location of these soils in relationship to the City of Delano.

Table 4-1
General Soil Characteristics
Within the Delano Planning Area

Soil Type – Name	Drainage	Prime Farmland
Cajon Loamy Sand	Somewhat excessive	Yes
Delano Sandy Loam	Well	Yes
Exeter Sandy Loam (0-2% slope)	Well	No
Exeter Sandy Loam (2-9% slope)	Well	No
Garces Silt Loam	Well	No
Garces Silt Loam, Hard Substrata	Well	No
Kimberlina Fine Sandy Loam	Well	Yes
McFarland Loam	Well	Yes
Wasco Sandy Loam	Well	Yes
Milham Sandy Loam (0-2% slope)	Well	Yes
Panoche Clay Loam (0-2% slope)	Well	Yes

4.3.6 Mineral Resources

There are no significant mineral resources or mining operations in Delano, or its sphere of influence.



Soil Types
City of Delano

Fig. 4-1

4.4 CLIMATE AND AIR QUALITY

4.4.1 Climate

The City of Delano is located within the northern portion of Kern County. Kern County is characterized by a "Mediterranean" type climate; the winters are cool and moist and the summers are dry and warm. Approximately 85% of the precipitation occurs during November to April. Temperatures 24 hour average 86.5 degrees in summer and 45 degrees in winter. Rainfall averages 7.95 inches per year.

Kern County experiences foggy conditions during the winter. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as "radiation fog" is more likely to occur inland. These fogs are more severe and persist longer in the lower elevations of the Valley.

During the summer months, the Pacific high pressure cell is positioned over the ocean to the west of the northern California coast. The clockwise flow of air around the high pressure cell results in persistent northwest winds over most offshore areas. This northwesterly flow is enhanced by the thermal trough through the interior valleys of California. The orientation of this trough and the pressure gradient between coastal and inland stations determines the variability in the summer weather pattern. Strong onshore pressure gradients occur with deep penetrations of marine air through the Carquinez Strait area (the only sea level channel through the coast). Cooler temperatures and stronger up-valley winds result from this distribution.

4.4.2 Air Quality Standards

Federal Regulations

The Clean Air Act of 1970 was the first major federal air quality regulation. Amended in 1977 and 1990, the Clean Air Act required the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for several pollutants. These standards are set by law at levels that protect public health and welfare, with an adequate margin of safety. Areas exceeding the federal standard more than two times per year are designated "nonattainment" areas under the Clean Air Act, and as such are subject to more stringent planning and pollution control requirements.

Under the 1990 amendment to the Clean Air Act, nonattainment areas are divided into five categories depending on future dates identified for meeting the standards. "Marginal" or "moderate" violators only slightly exceed the NAAQS, whereas "serious," "severe," or "extreme" violators exceed the standards by a much higher margin. Marginal areas are required to do little beyond what they are already doing to attain clean air, but areas designated "moderate" through "extreme" must adopt gradually tighter regulations. States with areas designated "moderate" or worse for ozone nonattainment areas are required to show a three percent per year reduction in emissions of volatile organic compounds.

Areas close to meeting Carbon Monoxide (CO) standards are required to start a wintertime oxygenated fuels program and to correct problems with existing vehicle inspection programs. Areas with higher levels of CO must also start an enhanced vehicle inspection program, and those areas with the highest CO levels must adopt transportation control measures.

The Federal Clean Air Act (FCAA) requires an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures California will use to attain the NAAQS. The Federal Clean Air Act Amendments of 1990 require states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is to be periodically modified to reflect the latest emissions inventories, planning documents, rule and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures.

State Regulations

In 1988, the California Clean Air Act (CCAA) was passed. The act contains more stringent guidelines for the attainment of air quality goals than the FCAA. The California Air Resource Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. The CCAA classifies nonattainment areas as moderate, serious, severe, and extreme based on severity of violation of state ambient air quality standards as follows:

Ozone Nonattainment Classifications

- Moderate 0.09 to 0.12 ppm
- Serious 0.13 to 0.15 ppm
- Severe 0.16 to 0.20 ppm
- Extreme Greater than 0.20 ppm

Carbon Monoxide Nonattainment Classifications

- Moderate 9.0 to 12.7 ppm
- Serious Greater than 12.7 ppm

Both the State of California and the federal government have established a variety of ambient air quality standards. The state 1-hour ozone standard is 0.09 ppm (parts per million, by volume), not to be equaled or exceeded. The federal 1-hour ozone standard is 0.12 ppm, not to be exceeded more than 3 times in any 3-year period. The air basin is also a non-attainment area for PM_{10}.

San Joaquin Valley Unified Air Pollution Control District

The City of Delano lies within the Kern County portion of the San Joaquin Valley Air Basin (SJVAB). The San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) was organized in 1991 by a Joint Powers Agreement of eight Valley counties, is the local lead agency for formulating Federal and State Air Quality plans, promulgating rules that affect a variety of air pollution sources, and reviewing local governments' land use plans and development proposals in order to estimate projected air quality impacts and suggest methods for reducing those impacts.

The San Joaquin Valley Unified Air Pollution Control District has jurisdiction over air quality matters in the San Joaquin Valley Air Basin. Its headquarters are located in Fresno with regional offices located in Bakersfield and Modesto.

The SJVUAPCD has adopted two attainment plans in an attempt to achieve state and federal air quality standards: the 1991 California Clean Air Act Quality Attainment Plan (AQAP) for ozone and carbon monoxide and the PM_{10} Nonattainment Area Plan. These documents provide the framework for air quality planning in the Valley and lay out the District's strategy to reduce emissions of nonattainment pollutants. In August 1992, the ARB reviewed and approved several portions of the 1991 AQAP. The Air Resources Board (ARB) postponed a decision on the Plan's ozone strategies until more information could be collected. The District was re-designated as a serious nonattainment area for PM_{10} by the EPA. The District approved and submitted a Serious Area PM_{10} Nonattainment Plan in September 1994.

4.4.3 Air Quality Monitoring Data

Air quality in the project area is best represented by air monitoring data collected by the State of California Air Resources Board at the Visalia air monitoring station. Based on air quality data for 1996, PM_{10} pollutants exceeded state standards twenty-five out of sixty-one days and federal standards were not exceeded out of sixty-one days. Ozone pollutants exceeded federal standards four days and state standards fifty-three days in 1996. No standard violations were observed for sulfur dioxide, carbon monoxide, or nitrogen dioxide. The pollutants, which have exceeded state or federal standards in the Kern County area, are provided below:

Ozone (O3)

Ozone is highly reactive secondary gas pollutant, which is toxic, colorless and has a pungent odor. Ozone is photochemically produced through complex chemical reactions of certain hydrocarbons and oxides of nitrogen (primary pollutants) in the presence of sunlight and temperatures above 59°F. In high concentrations, ozone and other photochemical oxidants are directly detrimental to humans causing respiratory irritation and possible alterations in the functioning of the lungs and inhibits vegetation growth.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. The worst ozone concentrations tend to be found downwind from emission sources in Valley metropolitan areas. Ozone has been the San Joaquin Valley's most obstinate air quality problem.

Particulate Matter (PM_{10})

PM_{10} refers to particulate matter equal to or less than 10 microns in diameter. This material, as opposed to dust, cannot be adequately filtered by the human respiratory system. Inhaled atmospheric particulates can, therefore, be harmful to humans by directly causing injuries to the respiratory tract and lungs or by the reactive gases which were absorbed by the inhaled particulates. Suspended particulates scatter and absorb sunlight, producing haze and reducing visibility. In areas close to major sources including industrial and agriculture operations, PM_{10} is generally higher in the winter when more fuel is burned and meteorological conditions favor buildup of directly emitted contaminants.

The actual composition of PM_{10} varies greatly with time and location. It depends on the sources of the material and meteorological conditions. Primary man-made sources of PM_{10} in the San Joaquin Valley are agricultural operations, agricultural burning, demolition and construction activities, entrainment of dust by motor vehicles on paved and unpaved roads, and residential wood burning. Wind erosion of agricultural land also represents a significant source of air borne dust in the Valley.

4.5 HYDROLOGIC CONDITIONS

4.5.1 Surface Waters

Delano does not have any actual surface water that runs through it. There are irrigation canals that traverse peripheral properties. Lake Woollomes, located southwesterly of the community is a storage facility for the Friant-Kern Canal.

In 1982, the Federal Emergency Management Agency (FEMA) prepared a Flood Insurance Study that investigated the existence and severity of flood hazards in the City of Delano. The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers. This initial work, which was completed in December of 1980, covered all significant flooding sources affecting Delano.

The FEMA study used the national standard of the 100-year flood as the base flood-line for purposes of flood plain management measures. For those areas subject to shallow flooding and deep ponding, boundaries of the 100-year flood were delineated using the appropriate elevations, depths and topographic maps at a scale of 1:24,000, with a contour interval of five feet. Flood boundaries are indicated on the Flood Insurance Rate Map (FIRM). On this map, the 100-year flood boundary corresponds to the boundary of the areas of special flood hazards; and the 500-year flood boundary corresponds to the boundary of the areas of moderate flood hazards. Figure 4-2 is a flood map of the Delano Area. The FEMA Flood Study depicted areas within the City limits which are classified as Flood Hazard Zone "A". The airport is in one such area.

FEMA Flood Map
City of Delano

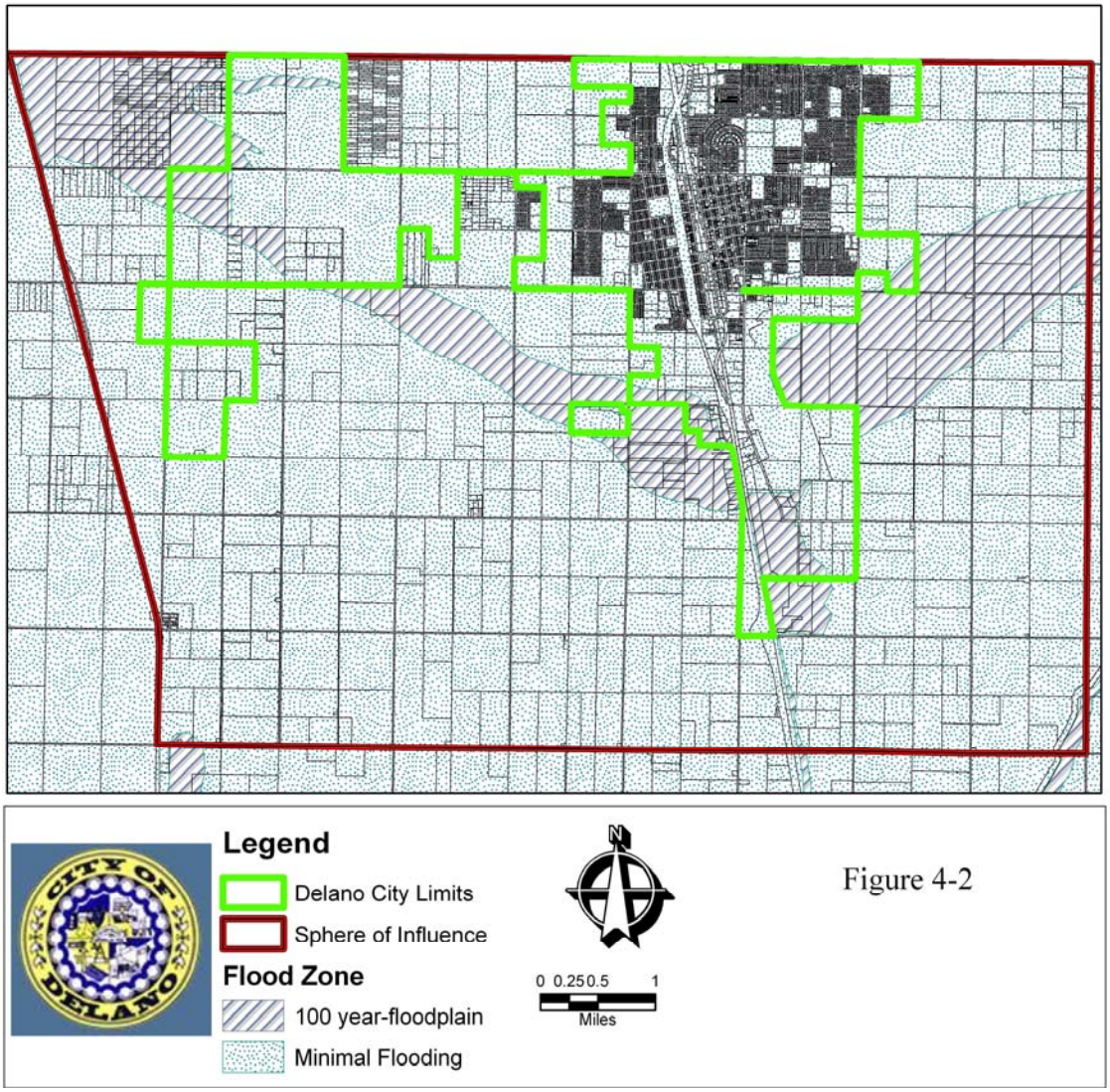


Figure 4-2

4.5.2 Ground Water

The primary source of domestic water for the City of Delano is groundwater. In general the groundwater quality of the City is relatively high. Production is generally low east of the community based on recent test wells east of Browning Road. Two existing wells and new well sites in the City will require treatment to remove DBCP, most likely using carbon filters. Other than this contaminant, the City's groundwater supply is suitable for domestic purposes without treatment. Prior to agricultural and urban development, groundwater moved from areas of recharge along the eastern rim of the Valley to areas of discharge along the Valley axis. Recharge was primarily by seepage from stream flows. Under present conditions, groundwater is recharged primarily from stream flow percolation, from percolation basins developed by agricultural irrigation districts, by percolation from treated wastewater disposal facilities and from percolation attributed to excess applied surface irrigation water. Data from the regional map produced by the State of California, Department of Water Resources (DWR), San Joaquin District, entitled *Lines of Equal Depth to Water in Wells, San Joaquin Valley*, depicts groundwater flowing toward the southwest.

4.6 BIOLOGICAL RESOURCES

4.6.1 Plant Communities

Historically, the natural vegetation of the Delano area was characterized by vast stretches of savanna, Valley Needlegrass Grassland, Valley Sacaton Grassland, and Non-native Grassland natural vegetation communities. The range of these natural vegetation communities has been significantly reduced from historic levels as a result of conversion of these lands to urban and agricultural uses. The only remnants of these natural communities presently remain in the Central Valley. The following natural community classifications are from *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Descriptions are incorporated by reference from Crampton (1974), Holland (1986), and Barbour and Major (1988).

> Valley Needlegrass Grassland is characterized by the presence of tussock-forming perennial purple stipa (*Stipa pulchra*) and nodding stipa (*S. cernua*). These native bunchgrasses are often surrounded by native and introduced annuals, which often exceed the bunchgrasses in cover. Aggressive, well adapted European annuals, introduced by 18th Century Spanish soldiers and missionary fathers, have largely replaced native perennial in California. Valley Needlegrass Grassland is often associated with Oak Woodlands on moister, well drained soils. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, perennial grasslands are now reduced to scattered remnants in the foothills of the Central Valley and the hills along the coast in central and southern California.
>
> Valley Sacaton Grassland is characterized by the presence of tussock-forming perennial grasses alkali sacaton (*Sporobolus airoides*) and saltgrass (*Distichlis spicata*). Valley Sacaton Grassland flourished on the alkaline flats of the Central Valley. Some annuals also grow on the alkali, namely alkali barley (*Hordeum*

depressum) and California alkali grass (*Puccinellia simplex*). Formerly extensive in the Tulare Lake Basin and along the San Joaquin Valley trough north to Stanislaus and Contra Costa Counties, Valley Sacaton Grassland is now much reduced.

Non-native Grassland is characterized by the presence of introduced grass species that may be interspersed with native forbs and shrubs. Typical species found in this natural community are wild oats (*Avena fatua*), slender wild oats (*Avena barbata*), the filarees (*Erodium cicutarium* and *E. botrys*), soft chess (*Bromus mollis*), ripgut brome (*Bromus rigidus*), red brome (*Bromus rubens*), and rye grass (*Lolium multiflorum*). This grassland community is often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. Non-native grassland is found in the valleys and foothills of most of California, except for the north coastal and desert regions. Non-native Grassland formerly occupied large portions of the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, areas that are now agricultural and urban.

Plant species represented in the general vicinity are indicated in Table 4-2. Sensitive plant species have been recorded and include the California Jewel Flower and the Valley Saltbush Scrub community.

4.6.2 Agricultural Communities

The agricultural community surrounding the City of Delano consists of both large and small farms. Crops typically grown in the area generally include grapes, plums, citrus, stone fruit, almonds, and alfalfa.

Although not prime habitat, croplands in the area can provide a source of food, water, and shelter to both native and introduced wildlife species. The lack of hedgerows, shelter-belts, wind breaks, and natural vegetation buffers severely limits the habitat value of these man-made environs. In addition, agricultural practices such as herbicide and pesticide application, monocultural cropping, and intensive tillage further reduces the habitat value of these lands.

4.6.3 Sensitive Species

The above listed vegetation associations support a variety of wildlife, plant species and subspecies indigenous to California. The conversion of native and naturalized plant communities to urban land uses, agriculture, and industrial facilities has significantly reduced available wildlife habitat. As a result of this conversion, several species of both plants and animals have been extirpated from California, or their populations have declined significantly. As a result, the California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS) have listed some species as threatened or endangered. In addition, several species, which are currently considered candidates for State or federal listing, have been included.

Table 4-2
Plant Species List

Common Name	Scientific Name
Baby Blue Eyes	*Nemophila menziesii*
Buffalo Gourd	*Cucurbita foetidissima*
California Poppy	*Eschscholtzia californica*
Centaury	*Centaurium calycosum*
Common Owl's Clover	*Orthocarpus purpuracens*
Common St. Johnswort	*Hypericum perforatum*
Common Sunflower	*Helianthus annuus*
Cowpen Daisy	*Verbesina encelioides*
Cream Cup	*Platystemon californicus*
Devils Claw	*Proboscidea altheaefolia*
Elegant Brodiaea	*Brodiaea elegans*
False Baby Stars	*Linanthus androsaceus*
Fiddleneck	*Amsinckia retrorsa*
Field Milkvetch	*Astragalus agrestis*
Flatpod	*Idahoa scapigera*
Goldfields	*Lasthenia chrysostoma*
Hooker's Evening Primrose	*Oenothera hookeri*
Idaho Fescue	*Festuca idahoensis*
Miniature Lupine	*Lupinis bicolor*
Prairie Star	*Lithophragma parviflorum*
Purple Needlegrass	*Stipa pulchra*
Rabbit Brush	*Chrysothamnus nauseosus*
Red Clover	*Trifolium pratense*
Redtop	*Agrostis alba*
Rosin Week	*Calycadenia truncata*
Showy Thistle	*Cirsium pastoris*
Shrubby Cinquefoil	*Potentilla fruticosa*
Snakehead	*Malacothrix coulteri*
Spreading Dogbane	*Apocynum androseafolium*
Spreading Fleabane	*Erigeron divergens*
Sweet Fennel	*Foeniculum vulgare*
Threadleaf Phacelia	*Phacelia linearis*
Velvet Grass	*Holcus lanatus*
Vinegar Weed	*Trichostoma lanceolatum*
White Sweet Clover	*Melilotus alba*
Wild Blue Flax	*Linium perenne*

For this report, the terms "species of concern" or "special status" species refers to those species viewed with special concern by the USFWS under the Federal Endangered Species Act, by CDFG under the California Endangered Species Act, and the Natural Diversity Data Base "Special Animals" (CDFG 1994a, 1994b, 1992). Attention is also given to those species given special status by various private conservation organizations. The assessment of effects to sensitive species includes those species listed under the following categories:

▪ Endangered	Listed as Endangered by the Federal Government
▪ Threatened	Listed as Threatened by the Federal Government
▪ Federal Candidate	Candidate for Federal listing (Taxa for which the U.S. Fish and Wildlife Service has sufficient biological information to support a proposal to list as Endangered or Threatened)
▪ Federal Species of Concern	Candidate for Federal listing (Taxa for which existing information may warrant listing, but for which substantial biological information to support a proposed ruling is lacking) prior to September 1, 1995.
▪ State Endangered	Listed as Endangered by the State of California
▪ State Threatened	Listed as Threatened by the State of California
▪ State SSC	California Department of Fish and Game "Species of Special Concern"

Existing data were reviewed to determine the historic occurrence of special status (i.e. sensitive) species and habitats in the project area, including CNDDB records, literature records, and local environmental documents. Only historic occurrences of these species have been recorded for the area. The current status of these species is shown in Table 4-3.

Table 4-3
Sensitive Species of the Central Valley Which Potentially Occur Within or Near the Delano General Plan Area

Common Name	Scientific Name	Status	
Plants			
Valley Saltbush Scrub			
California Jewel Flame	*Caulonthus Californucys*	FE	1B
Recurved Larkspur	*Delphinium recurvatum*	FSC	
Animals			
San Joaquin kit fox	*Vulpes macrotis mutica*	FE	CE
Tipton kangaroo rat	*Dipodymus nitratoides*	FE	—
California tiger salamander	*Ambystoma tigrinum californiense*	FC1	—
Western burrowing owl	*Athene cuncicularia hypugea*	FSC	
Northern harrier	*Circis Cyaneus*	FSC	
Blunt nose leopard lizard	*Gambelia silus*	FE	

Notes:

FE Federally Endangered
FC Federal Candidate; the threat and/or distribution data is sufficient to support listing.
FC1 Federal Candidate Species - Category 1
FC2 Federal Candidate Species - Category 2
FSC Federal Species of Concern; (formerly Federal Candidate Category 2 species) the threat and/or distribution data insufficient to support listing at this time.
CE California Endangered
1B California Native Plant Society (CNPS) - Plants rare and endangered in California and elsewhere

4.7 CULTURAL RESOURCES

A cultural resources records search was conducted for this project utilizing the database of the Southern San Joaquin Valley Information Center, California State University, Bakersfield. The results of the search indicated there was one recorded archaeological site in the vicinity (CA –Ker – 2989H), the abandoned "domestic refuse" site in southwestern Delano. Artifacts have also been discovered during airport construction. The "Weaver House" located at 330 Lexington has potential eligibility for the National Register of Historic Places. A mortuary designed in 1962 by Frank Lloyd Wright for Cecil and Betty LaCourse has been identified near Browning and 9th.

4.8 LIGHT AND GLARE

Generally, concerns over light and glare relate to the aesthetics of an area when a new light source is introduced in a relatively undeveloped or rural area. In other instances, new light sources can become a nuisance to adjacent land uses and possibly cause a hazardous condition for traffic. Delano is a small rural community limited to primarily one- and two-story structures in commercial and residential neighborhoods. Current sources of illumination in the community consist of street lamps, minor identification signage and other lighting associated with existing development. There are no existing glare impacts (i.e. buildings constructed of highly reflective materials) occurring within the Delano Area.

Development and growth in the City of Delano has resulted in increased night lighting in the region. Much of this development has occurred in the southwest and southeast quadrants of the City.

4.9 PUBLIC SAFETY

4.9.1 Risk of Upset

Seismic Hazards - The most serious direct earthquake hazard is the damage or collapse of buildings and other structures by ground shaking. Ground shaking is the vibration which radiates from the epicenter of an earthquake. Damage to structures from ground shaking is caused by the transmission of earthquake vibrations from the ground into the structure. The intensity of the vibration or shaking and its potential impact on building and other urban development is determined by several factors:

- The nature of the underlying materials, including rock and soil;
- The structural characteristics of a building;
- The quality of workmanship and materials used in its construction;
- The location of the epicenter and the magnitude of the earthquake; and
- The duration and character of the ground motion.

Older buildings constructed before building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in building codes, are the most likely to suffer damage in an earthquake. Most of Delano's buildings are one or two stories high and are of wood frame construction, which is considered the most structurally resistant to earthquake damage.

Older masonry buildings without earthquake-resistant reinforcement are the most susceptible to the sort of structural failure, which causes the greatest loss of lives. The susceptibility of a structure to damage from earthquake ground shaking is also related to the foundation material underlying the structure. A foundation of rock or very firm material intensifies short period motions, which affect low-ridged building more that tall, flexible ones. A deep layer of logged soft alluvium may cushion low ridged buildings, but accentuate the motion in tall buildings. The amplified motion resulting from softer alluvium soils can also severely damage older masonry buildings. Some unreinforced masonry buildings are located in downtown Delano. No assessment of these buildings has been made.

Other potentially dangerous conditions include building projections, which are not firmly anchored, such as parapets and cornices. These projections could collapse during periods of strong and/or sustained ground shaking.

Fire is often a major form of damage resulting from ground shaking effects. Most earthquake-induced fires start because of ruptured gas lines, damage to wood, gas or electric stoves and damage to other gas or electric equipment.

Flooding Hazards - Flood hazards are addressed in the Safety Element.

Fire Hazards - Both structural and wildland fire hazards threaten life and property within the Delano vicinity. Wildland fires resulting from both man-made and natural causes occur in brush, or grasslands, primarily in sparsely developed or existing open space lands. Structures and urban development may also be threatened or destroyed in the area of wildland fires. Structural fires usually result from man-made causes and threaten industrial, residential and commercial structures, especially those built before building and fire codes were established. These substandard structures represent the highest potential for injury, death, or loss of property.

4.10 AGRICULTURE

Objectives

A. To preserve prime farmland and farmland of statewide importance until logical and timely urban growth is appropriate.

B. To provide a "greenbelt" around the City's perimeter to maintain the physical separation between the City and nearby communities and to maintain the scenic beauty surrounding the City.

C. To establish logical growth patterns as a means of protecting agriculture.

Policies, Standards

1. Assure the continuation of agricultural production as an important economic activity by establishing areas to be designated and maintained as part of the City's greenbelt.

2. New residential development shall be encouraged as infill parcels and within areas adjacent or in close proximity to existing development where infrastructure and services can be easily extended. This measure is intended to reduce the unnecessary removal of finite natural resources, such as prime soil, to reduce the cost of community services provided to residents, and to eliminate "leap frog" development.

3. Extension of urban improvements and services, including water, sewer lines and storm drain facilities, into agricultural areas shall be managed as a means to direct the location and timing of new urban development.

4. The City shall give preference to new development projects that are proposed for non-prime agricultural soils.

5. To protect human health from potential impacts due to agricultural spraying, dust, and traffic congestion, the City will encourage lower density developments adjacent to land planned for long-term agricultural uses.

6. Maintain an appropriate minimum parcel size for agricultural and urban reserve designated parcels to encourage viable agricultural operation and to prevent parcelization into rural residential or "ranchette" developments.

7. Increase residential densities on infill parcels by encouraging the development of PUD's.

4.11 NATURAL RESOURCES

Objectives

A. To protect natural resources including groundwater, soils, and air quality, to meet the needs of present and future generations.

B. Ensure that environmental hazards including potential flooding and impacts from agricultural practices are adequately addressed in the development process within the City.

Policies, Standards

1. Protect areas of natural groundwater recharge from land uses and disposal methods, which would degrade groundwater quality. Promote activities, which combine stormwater control, and water recharges.

2. Expand programs that enhance groundwater recharge in order to maintain the groundwater supply, including the installation of detention ponds in new growth areas.

3. No urban level development shall be approved in the City unless the development is, or can be served by the City sewer system.

4. Water conservation methods shall be continued.

5. To assist the City in meeting the clean air quality requirements of the federal and state Clean Air Acts, the City will provide community planning guidance to help reduce potential air quality impacts.
6. Promote biological diversity and the use of plant species compatible with the bio-region.

7. If street trees are removed, they shall be replaced with tree species specified on the City's Street Tree Master Plan.

8. Construction activities shall comply with the PM_{10} control measures as set forth by the San Joaquin Valley Unified Air Pollution Control District's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI).

9. The Joaquin Valley Unified Air Pollution Control District's *Guide for Assessing and Mitigating Air Quality Impacts* will be used to evaluate and mitigate the effects of new developments to the extent feasible.

10. Properties which may have listed plant and animal species will be required to have biological investigation if such species may be present. Federal and State protocols and requirements shall be used for such surveys and needed mitigation.

11. Construction activity will be conducted in the manner presented in Section VIII of Appendix K of the *CEQA Guidelines,* which describes procedures to employ in the event of discovery or recognition of any human remains.