

**CITY OF SOLVANG
PLANNING COMMISSION**

MEETING AGENDA

Monday, May 2, 2016 – 6:00 P.M.
Council Chambers – Solvang Municipal Center – 1644 Oak Street

Members: Robert Clarke, Chair; Jack Williams, Vice-Chair;
Aaron Petersen; Gay Infanti; Brian Chaney

Staff: Arleen T. Pelster, Planning & Economic Development Director
Dave Fleishman, Assistant City Attorney
Brynda Messer, Assistant Planner

PLEDGE TO THE FLAG

1. PRELIMINARY MATTERS:

- A. PUBLIC COMMENT:** Requests from the public to speak to the Commission on matters not on the agenda.
- B.** Requests for Continuance, Withdrawals, or Addition of Ex-Agenda items
- C.** Conflicts and/or Ex-Parte Communications
- D.** Approval of Minutes:
April 4, 2016

2. PUBLIC HEARINGS ON NEW DEVELOPMENT AND CITY PROJECTS

A. Proposed Amendment to the General Plan for the Conservation, Open Space and Safety Elements

Hearing to review updates to the General Plan Conservation/Open Space and Safety Elements and consider a recommendation for approval by the City Council.

Planner: Arleen Pelster

3. PLANNING COMMISSIONER'S COMMENTS

4. PLANNING/COMMUNITY DEVELOPMENT DIRECTOR'S COMMENTS
(Oral reports only/no written materials provided in packet)

5. ADJOURNMENT

CITY OF SOLVANG
PLANNING COMMISSION

DRAFT MEETING MINUTES

Monday, April 4, 2016 6:00 P.M.
Regular Hearing of the Planning Commission
Council Chambers – Solvang Municipal Center – 1644 Oak Street

Commissioners Present: Robert Clarke, Chair; Jack Williams, Vice Chair;
Gay Infanti, Brian Chaney, Aaron Petersen

Staff Present: Arleen T. Pelster, Planning & Economic Development Director
Brynda Messer, Assistant Planner
Dave Fleishman, Assistant City Attorney

CALL TO ORDER: Chair Clarke called the meeting to order at 6:00 p.m.

PLEDGE TO THE FLAG

1. PRELIMINARY MATTERS:

A. PUBLIC COMMENT: Requests from the public to speak to the Commission on matters not on the agenda.

None.

B. Requests for Continuance, Withdrawals, or Addition of ex-agenda items

None.

C. Conflicts and/or Ex-Parte Communications

None.

D. Approval of Minutes:

November 2, 2015 –Regular Planning Commission Meeting

Motion to approve made by Commissioner Petersen and seconded by Commissioner Williams. Vote is 5-0.

2. PUBLIC HEARING ON NEW DEVELOPMENT AND CITY PROJECTS

A. Valley Plaza – The Merkantile

Location: 1980-1992 Old Mission Drive – APN 139-240-074, 075

Planner: Arleen Pelster

Hearing on the request of Joshua Richman, Owner/Agent to consider the approval of a Development Plan [application filed March 18, 2015], to reconfigure and reconstruct the existing Valley Plaza shopping center comprising 39,282 square feet (sq. ft.) and two apartment units, and rebuild a new shopping center comprising 41,427 sq. ft. commercial space and eight one-bedroom residential units, pursuant to Zoning Ordinance Sections 11-16-4 (Permit Procedures), on a 3.9 acre property zoned C-2, and to adopt the Mitigated Negative Declaration (MND) pursuant to Section 15070 of the State Guidelines for the Implementation of the California Environmental Quality Act (CEQA). Approval of an alternative to allow a new access driveway from Mission Drive (State Route 246) is also requested.

Commissioner Petersen stepped down and left the Council Chambers due to a potential conflict of interest.

Presentation of the staff report by Arleen Pelster. Ms. Pelster introduced the environmental review consultants, David Foote and Lindsay Corica of Firma.

David Foote advised there were corrections on page 17, 9b regarding water supply changes, and page 23 regarding traffic impacts. He noted that the totals would be 1,862 trips per day, not 98.

Steve Rigor, architect, gave his presentation of the project.

Chair Clarke opened the public hearing at 6:57 p.m.

Paul Matthies: Mr. Matthies indicated he is representing four families who reside across from Valley Plaza. He expressed concern regarding impacts resulting from construction, access to the property, and stated he felt the Caltrans alternative is misnomer. Without the new driveway from Highway 246, the majority of the traffic is on Old Mission, and Alamo Pintado and Old Mission has congestion from Alamo Pintado and Highway 246. There are sight line problems. He suggested the City consider red curbs on Old Mission. He thanked applicant and staff.

Jordan Mo: Ms. Mo noted that Mr. Matthies addressed most of her concerns. One of her primary concerns is employee parking.

David Watts: Mr. Watts stated he lives at 1903 Old Mission. He has concerns regarding driveway exits to Old Mission, the lack of stop signs at the exits, noise, and stated he doesn't like the architecture.

Chair Clark went over his notes of the concerns and asked the applicant to respond.

Steve Rigor responded that the Caltrans alternative is still an open option and painting the curbs red is a City decision.

Matt van der Linden, Public Works Director, stated Public Works staff reviewed Mr. Matthies comment letter, and his department will look into red curbing.

Commissioner Infanti had questions regarding the public event area, location of retaining walls, and the removal of trees.

Clint Pearce, representing the applicant, discussed other projects the contractor had done in San Luis Obispo. He noted that the contractor is skilled at managing construction on small sites, and that the contractor has a well staffed team which works very quickly.

Commissioner Infanti suggested changes to Conditions of Approval B-8, D-7b, D-14, and E-2.

Motion to adopt Resolution No. 16-01 approving the Development Plan, Subject to the Findings and the Conditions of Approval with modifications, was made by Commissioner Infanti and seconded by Commissioner Chaney. The motion passed on a vote of 4-0-1, with Commissioner Petersen not participating.

Motion of adopt the Mitigated Negative Declaration was made by Commissioner Williams and seconded by Commissioner Infanti. The motion passed on a vote of 4-0-1, with Commissioner Petersen not participating.

3. PLANNING COMMISSIONER'S COMMENTS

None.

4. PLANNING & ECONOMIC DEVELOPMENT DIRECTOR'S COMMENTS

Arleen Pelster noted the Planning Commission would be meeting in May.

5. ADJOURNMENT

Motion to adjourn at 7:39 p.m.



Agenda Item: 2a

PLANNING COMMISSION STAFF REPORT

GENERAL PLAN UPDATE for the CONSERVATION, OPEN SPACE, AND SAFETY ELEMENTS

Meeting Date: May 2, 2016

TO: CITY PLANNING COMMISSION

FROM: Arleen T. Pelster, AICP, Planning & Economic Development Director

LOCATION: Citywide

CONSULTANT: Firma

SUBJECT: Proposed Amendment to the General Plan in the form of an update to the Conservation, Open Space, and Safety Elements.

I. RECOMMENDATION:

It is recommended the Planning Commission adopt Resolution 16-02, recommending to the City Council adoption of an amendment to the General Plan consisting of an update to the Conservation, Open Space, and Safety Elements, and to approve the Negative Declaration as adequate environmental review pursuant to the State Guidelines for the Implementation of the California Environmental Quality Act (CEQA).

II. BACKGROUND:

The Conservation, Open Space, and Safety (COSSE) Elements are required elements of the General Plan.

In 2014, the City contracted with Firma to prepare a General Plan Update for the COSSE Elements. The COSSE Elements were last updated in 1988. It is recommended that agencies update their secondary elements, such as the Noise Element, following update of major elements such as the Land Use, Circulation, and Housing elements in order to insure consistency with those updated elements. The Land Use and Circulation Elements were updated in June of 2008, and the Housing Element was updated and certified by the State in June of 2015.

III. DISCUSSION:

The Conservation Element addresses identification, conservation, development, and use of natural resources. Natural resources include water, forests, soils, waterways, wildlife, and mineral deposits. The Open Space Element identifies plans and measures for preserving open space for natural resources, for managing the production of resources, for outdoor recreation, and for public health and safety. Some components of these Elements overlap; therefore, the Elements are combined. This is a common practice among municipalities.

The Safety Element establishes policies and programs to protect the community from risks associated with seismic, geologic, flood, and wildfire hazards.

Background Report

A Background Report was prepared to provide an overview of relevant information that was used to inform the goals, policies and implementation actions of the updated Elements. The Report includes a list of key terms to inform the reader, along with a summary of relevant laws, plans and regulations. Where necessary, maps and illustrations are provided. Each topic concludes with a list of key findings. Relevant portions of the Background Report were summarized in the elements to provide a context for the goals, policies and action items.

Conservation/Open Space Element

- Updated regulatory setting;
- New/current data regarding natural and open space resources, including new maps.
- Revised/expanded policies and action items are recommended for the following topics:
 - o Protection of surface and groundwater quality (policy 2.1);
 - o Water supply, with emphasis on implementation of the City's 2011 Water Supply Master Plan (policy 2.2);
 - o Cultural, historical and paleontological resources (policies 4.1, 4.2);
 - o Protection of biological resources, wildlife communities and habitat (policy 3.1);
 - o Mineral resources (policy 7.1 and 7.2); and
 - o Establishing and maintaining open space and the protection of scenic resources, including scenic highways (policy 8.1).
- New policies and action items are recommended to address the following:
 - o Air quality and climate change (policies 5.1, 5.2, 5.3, 5.4, 5.5, 5.6); and
 - o Sustainability and energy use (policy 6.1, 6.2, 6.3, 6.4).

Safety Element

- Updated regulatory setting;
- New/current data regarding natural and human-caused hazards, including new maps;
- Revised/expanded policies and action items are recommended for the following topics:

General Plan COSSE Elements Update

P.C. Hearing Date: May 2, 2016

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- o Emergency preparedness, including a new map of evacuation routes (policies 2.1, 2.2, 2.3, 2.4 and 2.5);
- o Geologic and seismic hazards (policies 3.1, 4.2 and 3.4);
- o Flooding, including updated flood maps based on the most recent Flood Insurance Rate Maps and other data (policy 4.1, 4.2);
- o Hazardous materials (policy 6.1); and
- o Public safety (policy 7.2).

New policies are recommended to address the following:

- o Dam failure (policy 4.3);
- o Low impact development to minimize flooding, erosion and degradation of surface water quality (policy 4.2);
- o Coordination with other fire protection agencies (policy 5.2);
- o Aircraft operations associated with the Santa Ynez Airport (policy 7.1);
- o Disease vectors and pesticides (policy 7.3); and
- o Hazardous trees (policy 7.4).

IV. ENVIRONMENTAL REVIEW:

A Negative Declaration (ND) was prepared for the project, and is included in the Staff Report as Attachment C. Due to the non-complex nature of the project, an environmental hearing was not held. The Negative Declaration (ND) concluded that there is no substantial evidence that the Project may have a significant effect on the environment. No mitigation measures were required.

Public Comment: The draft ND was circulated from March 21, 2016 to April 25, 2016. No comment letters have been submitted to date. Any comment letters received after preparation of this report will be distributed at the hearing.

V. ATTACHMENTS:

- A. Draft COSSE Elements and Background Report
- B. Draft PC Resolution 16-02
- C. Draft Negative Declaration

City of Solvang General Plan

Conservation, Open Space and Safety Elements

Background Report

Staff

Brad Vidro, City Manager

Arleen Pelster, AICP, Planning and Economic Development Director

Matt van der Linden, Public Works Director/City Engineer

Consultants

firma

D L M

February,

2016

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Introduction

This Background Report provides an overview of relevant information that will be used to inform the goals, policies and implementation actions of the updated Conservation, Open Space and Safety Elements. The Report is divided in two Chapters: Safety, and Conservation and Open Space. The topical information includes a list of key terms to inform the reader, along with a summary of relevant laws, plans and regulations; where necessary, maps and illustrations are provided. Each topic concludes with a list of key findings which will guide the crafting of goals, policies and actions in the updated Elements.

The City's General Plan applies to land within the current city limits and its sphere of influence (the area into which the City will eventually grow and provide services). These areas are referred to collectively in this Background Report as the planning area, or the plan area.

Safety

1.1 Introduction

This chapter of the Background Report provides a broad survey of hazards affecting the Solvang area. This information does not take the place of site-specific evaluations by qualified professionals. Rather, it is intended to provide a technical foundation that will be used to inform the goals, policies and implementation actions contained in the Safety Element.

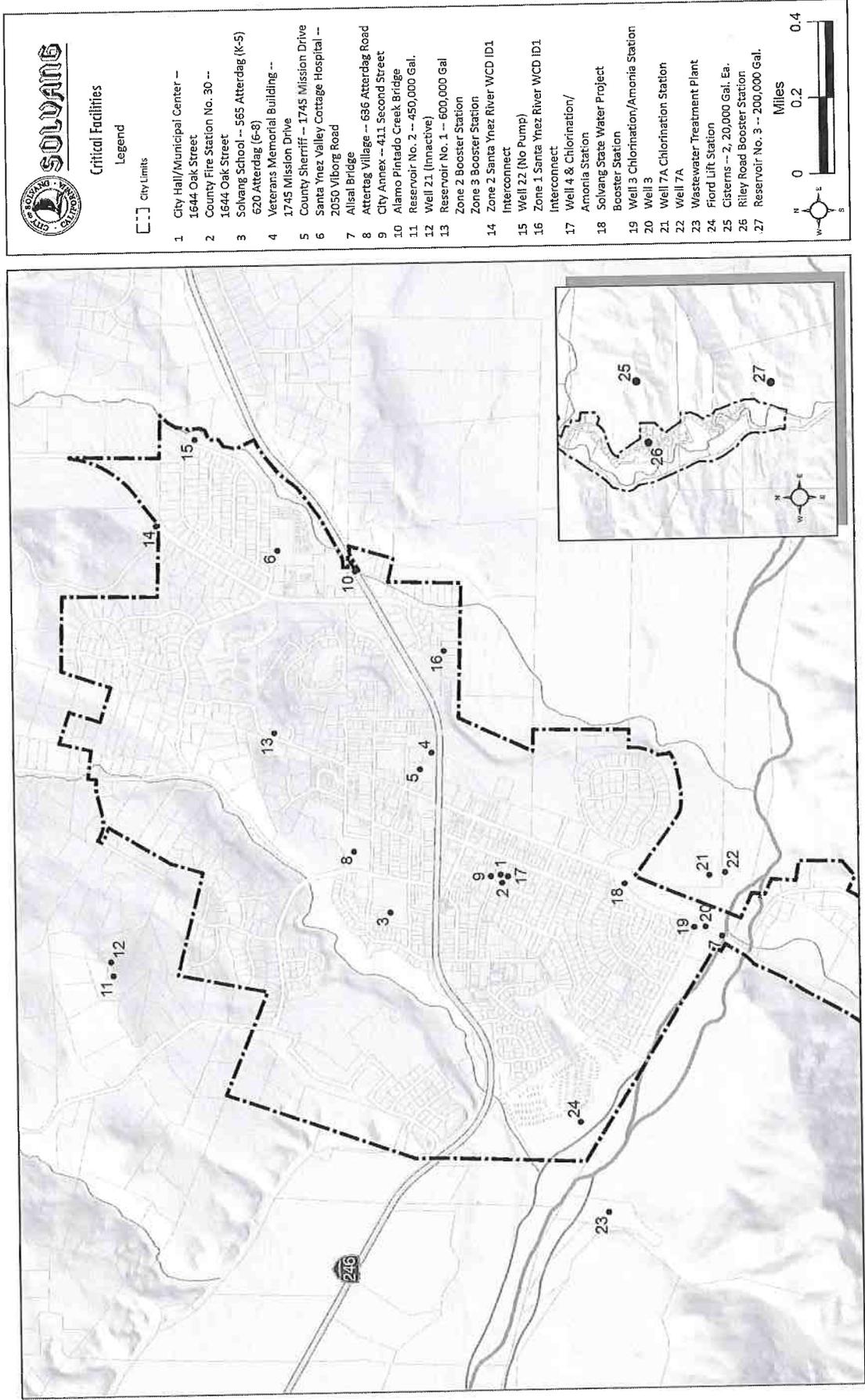
1.1.1 Disaster Preparedness and Avoidance

The most effective and least costly approach to protect life and property from hazards is avoidance. However, many hazards such as earthquakes and wildfire affect a large area and the affected area cannot always be predicted with certainty. For these types of hazards a proactive approach of preparation, mitigation and avoidance is needed. Disaster preparedness typically involves the development of response procedures, the identification of evacuation routes, design and installation of warning systems, purchase of emergency equipment, and training of emergency personnel. In addition to advance preparation, the risks and adverse effects of hazards can be wholly or partially mitigated with proper planning, adherence to current building codes, and through the effective management of resources when an emergency does occur.

To guide the City's emergency response efforts, the City adopted an Emergency Management Plan in 2013. The Plan establishes the emergency organization, assigns tasks, and specifies policies and general procedures to be followed in an emergency. The Plan also provides for the coordination of planning efforts among the various emergency staff and service elements utilizing the California Standardized Emergency Management System (SEMS), the Federal National Incident Management System (NIMS) and the Incident Command System (ICS).

In January, 2012, the City adopted a Multi-Hazard Mitigation Plan (MHMP) to identify strategies for mitigating the natural and human caused hazards affecting the City. The MHMP contains a capability assessment, an assessment of vulnerabilities and a complete hazard mitigation strategy to protect life, property and the City's critical facilities from hazards associated with (among other things) earthquakes, wildfires, flooding, dam failure, and landslides. Critical facilities in Solvang are shown on Figure 1.

Figure 1 – Critical Facilities in Solvang



1.2 Geologic and Seismic Hazards

Geologic, soil, and seismic factors affect the suitability of land for various uses and, therefore, should be considered (along with other factors) in decision-making that affects land use in order to eliminate or minimize their adverse effects.

1.2.1 Important Terms Used In This Section

Alluvial/Alluvium. Erosion caused by wind or rain introduces soils, materials, and rock fragments into streams and rivers. These materials are reduced by the action of water movement and mixed with debris as they are washed down the mountains and hills. They are deposited as sediment that spreads out in a fan shape when the watercourse reaches a relatively level area. Such deposits are called alluvial materials or alluvium. The fan-shaped zone of deposited sediment is called an alluvial fan.

Asbestos. A general term for naturally occurring fibrous silicate minerals. The most common type of asbestos in California is from the serpentine mineral group, commonly found in ultramafic rocks.

Fault. A fault is a fracture in the crust of the earth, along which rocks on one side have moved relative to rocks on the other side. Most faults are the result of repeated displacements over a long period of time. A fault trace is the line on the earth's surface defining the fault.

Fault Rupture. A crack or breaking of the ground along a fault during an earthquake.

Groundshaking. The vibration which radiates from the epicenter of an earthquake.

Holocene Period. The geologic time period including the last 11,000 years. Generally, faults that have experienced activity during this period are considered to be active.

Lateral Spreading. The horizontal movement or spreading of soil toward an open face such as a stream bank, the open side of fill embankments, or the sides of levees.

Liquefaction. The loss of soil strength due to seismic forces acting on water-saturated granular soils. This can lead to a "quicksand" condition, which causes many types of ground failure. Liquefaction typically occurs in areas underlain by soils containing unconsolidated, saturated, clay-free sands and silts.

Lurch Cracking. Fractures, cracks, and fissures produced by groundshaking, settling, compaction of soil, and sliding.

Modified Mercalli Intensity (MMI) Scale. A 12-point scale of earthquake intensity based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. Effects range from those that are detectable only by seismicity recording instruments (I) to total destruction (XII).

Moment Magnitude (M_w). A logarithmic scale that is used by modern seismologists to measure the total amount of energy released by an earthquake. This scale has largely replaced

the Richter Scale as the primary scale for the measurement of earthquakes because it conveys more precise information to geologic and structural engineers.

Pre-Quaternary Period. The geologic period preceding over 1.6 million years ago, preceding the Quaternary period.

Quaternary Period. The geologic time period including the last 1.6 million years. This period can be further divided into the Early Quaternary period (between 700,000 and 1.6 million years ago) and the Late Quaternary period (within the last 700,000 years).

Richter Scale. A logarithmic scale developed by Dr. Charles F. Richter and Dr. Beno Gutenberg to measure earthquake magnitude (M) by the amount of energy released, as opposed to earthquake intensity as determined by local effects on people, structures, and earth materials. Each whole number on the Richter scale represents a 10-fold increase in amplitude of the waves recorded on a seismogram and about a 32-fold increase in the amount of energy released by the earthquake.

Seiche. An earthquake-generated wave within an enclosed or restricted body of water.

Seismicity. The geographic and historical distribution of earthquakes.

Settlement. The compaction of soils caused by groundshaking.

Shrink/Swell Potential. A soil's potential to shrink and swell depending on the amount and types of clay in the soil. Soils with these properties expand when wet and disproportionately shrink when dry.

Subsidence. The sinking of land, usually occurring over broad areas, which typically results from extraction of groundwater, gas, oil, and geothermal energy, or hydrocompaction, peat oxidation, and fault rupture.

1.2.2 Regulatory Setting

State Regulations

California Government Code Section 65302. California Government Code Section 65302 requires that the General Plan must address threats to human and environmental safety in a Safety Element. Hazards from seismic shaking, ground failure, seiche, tsunami, slope instability, and subsidence must be included in the assessment. Design requirements must be included to safeguard against risk of injury. The California Building Standards Commission is charged with regulating building standards within the state, and typically adopts and amends codes prepared by the International Code Council. No specific federal structural building standards are enforced.

Alquist-Priolo Earthquake Fault Zoning Act (APEFZA). The Alquist-Priolo Special Studies Act was signed into law in 1972 (in 1994 it was renamed the Alquist-Priolo Earthquake Fault Zoning Act). The primary purpose of the Act is to mitigate the hazard of fault rupture by prohibiting the location of structure for human occupancy across the trace of an active fault. This state law was passed in direct response to the 1971 San Fernando earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. Surface rupture is the most easily avoided seismic hazard. The

Act requires the State Geologist to delineate “Earthquake Fault Zones” along faults that are “sufficiently active” and “well defined.” The Act dictates that cities and counties withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting. No portion of the City’s Plan Area is within an Earthquake Fault Zone. However, a seismic special study zone has been designated for a portion of the Los Alamos fault east of the community of Los Alamos, about 10 miles north of the City.

California Division of Mines & Geology (CDMG) Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California, 1997. This document describes reasonable recommendations to ascertain the degree of risk that may exist on a site relative to seismic hazards, such as from landslides, liquefaction, and ground shaking. For liquefaction, they recommend that the following be performed:

- Screening investigations for liquefaction potential
- Qualitative evaluation of liquefaction potential
- Evaluation of potential liquefaction hazards
- Mitigation of liquefaction hazards

For landslides, CDMG Special Publication 117 recommends that the following be performed:

- A screening investigation to determine the possible presence of landslides
- If the screening investigation identifies the likely presence of landslides, then perform a quantitative evaluation of earthquake-induced landslide potential - this task includes field exploration, site sampling, and geotechnical testing (a slope stability analysis might also be appropriate here)
- Evaluation of potential earthquake-induced landslide hazards
- Mitigation of earthquake-induced landslide hazards

Seismic Hazards Map Act. Under the Seismic Hazards Mapping Act, seismic hazard zones are to be identified and mapped to assist local governments in land use planning. The intent of this publication is to protect the public from the effects of strong ground shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. In addition, California Geological Survey’s (CGS) Special Publications 117, “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” provides guidance for the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations. The CGS has mapped one seismic special study zone in Santa Barbara County along the Los Alamos fault located about 10 miles north of the City of Solvang (Figure 3) east of the community of Los Alamos.

Landslide Hazard Identification Program. The Landslide Hazard Identification Program requires the State Geologist to prepare maps of landslide hazards within urbanizing areas. According to Public Resources Code Section 2687 (a), public agencies are encouraged to use these maps for land use planning and for decisions regarding building, grading and development permits.

California Building Code (CBC). California Code of Regulations (CCR), Title 24, Part 2, California Building Code (CBC), provides minimum standards for building design. Local codes are permitted to be more restrictive than Title 24, but are required to be no less restrictive. Chapter 16 of the CBC deals with General Design Requirements, including (but not limited to)

regulations governing seismically resistant construction (Chapter 16, Division IV) and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapters 18 and A33 deal with site demolition, excavations, foundations, retaining walls, and grading, including (but not limited to) requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage and erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in Cal-OSHA regulations (CCR, Title 8). Among other things, the CBC defines different building regions in the state and ranks them according to their seismic hazard potential. There are four types of these regions: Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest seismic potential. The City and its planning area are in Seismic Zone 4; accordingly, any future development would be required to comply with all design standards applicable to Seismic Zone 4. The City of Solvang implements the CBC through the building permit process (Solvang Municipal Code, Title 10, Building Regulations).

Local Regulations

Solvang Municipal Code Chapter (Construction). Title 10, Chapter 1 of the Solvang Municipal Code (Building Codes) regulates construction activities within the City to protect the health, safety, and general welfare of the public and natural environment. All construction is required to be in conformance with the California Building Code (CBC), specifically Chapter 23 as it provides for earthquake-resistant design, Chapter 70 as it provides for excavation and grading, and with the City’s adopted hillside development ordinance.

1.2.3 Seismicity and Seismic Risk

Setting

Solvang is located in the western segment of the Transverse Range geologic province (Figure 2), an east-west physiographic feature which includes the San Bernardino Mountains, the San Gabriel Mountains, the Santa Monica Mountains, the Channel Islands, and the Santa Ynez Mountains. The formation of this province's mountain ranges and other features is due to the relative movement of the Pacific and North American continental plates along the San Andreas fault system.

The City is located in the Santa Ynez Valley, a wedge-shaped topographic depression bounded by the Santa Ynez Mountains on the south, the San Rafael Mountains to the east and north, and the Purisima Hills on the west. It is a down-dropped structural block between two major faults. On the south, the east-west trending Santa Ynez Fault forms the base of the uplifted Santa Ynez Mountains

and extends from Ventura County across the entire width of Santa Barbara County (Figure 3).

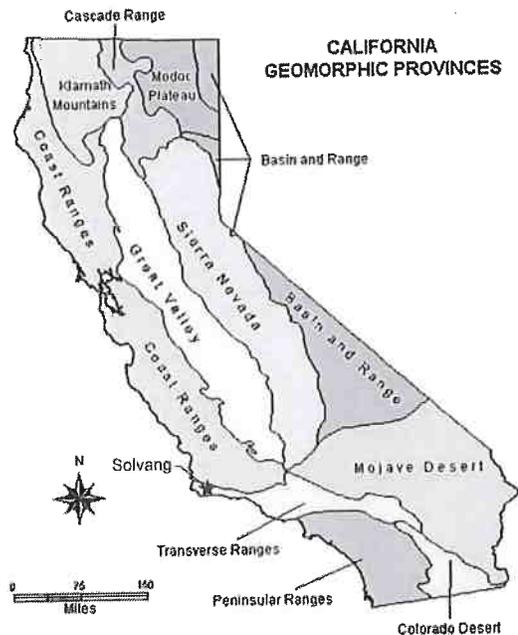


Figure 2 -- Geomorphic Provinces of California

The City lies in a transitional area between the uplands and dissected foothills of the Santa Ynez range to the east and a broad alluvial plain to the west. The upland areas of the City are underlain by a thick layer of consolidated rock material; near the Santa Ynez River, alluvial deposits cover the consolidated rock, forming discontinuous tillable areas.

Response to Seismic Risk

Design criteria for seismic loading and other geologic hazards are provided generally in the seismic elements of city and county general plans, but more specifically in the building and development regulations of these local governments. These documents typically incorporate CBC design standards and are informed by the APEFZA as described in the Regulatory Setting, above. The CBC provides design criteria for geologically induced loading that govern sizing of structural members. The CBC also provides calculation methods to assist in the design process. City and County building and development regulations incorporate the provisions of the CBC by reference, and add additional safety factors for critical structures and local considerations.

Earthquake Measurement

Earthquake magnitude is a quantitative measure of the strength of an earthquake or the strain energy released by it, as determined by the seismographic or geologic observations. It does not vary with distance or the underlying earth material. This differs from earthquake intensity, which is a qualitative measure of the effects a given earthquake has on people, structures, loose objects, and the ground at a specific location. Intensity generally increases with increasing magnitude and in areas underlain by unconsolidated materials, and decreases with distance from the hypocenter.

Several magnitude scales have been developed with the most commonly used scale called the moment magnitude (M_w) scale. Moment magnitude is related to the physical size of fault rupture and the movement or displacement across the fault, and as such is a more uniform measure of the strength of an earthquake. Another measure of earthquake size is seismic moment. The seismic moment determines the energy that can be radiated by an earthquake. The moment magnitude of an earthquake is defined relative to the seismic moment for that event. The Richter Scale is another commonly used measurement of earthquake magnitude, based on a logarithm of wave amplitude recorded on a seismograph. The Richter scale tends to be less accurate for magnitudes above about 7.5, so it is being replaced in modern seismologic investigations by the moment magnitude scale.

Earthquake intensity in a given locality is typically measured using the Modified Mercalli Intensity Scale with values of this scale ranging from I to XII. The most commonly used adaptation covers the range of intensities from the conditions of a value of I that is defined as not felt except by very few, favorably situated, to XII that is defined as damage total, lines of sight disturbed, and objects thrown into the air. While an earthquake has only one magnitude, it can have many intensities, which typically decrease with distance from the epicenter. Table 1 describes the effects of the 12 levels of the Mercalli Scale. Table 2 compares the Richter and Mercalli scales.

Table 1 -- Modified Mercalli Scale	
Scale	Effects
I	Earthquake shaking not felt.
II	Shaking felt by those at rest
III	Felt by most people indoors; some can estimate duration of shaking.
IV	Felt by most people indoors. Hanging objects swing, windows and doors rattle, wooden walls and frames creak.
V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle, and glasses clink. Doors close, open, or swing.
VI	Felt by everyone indoors and most people outdoors. Many now estimate not only the duration of the shaking, but also its direction and have no doubt as to its cause. Sleepers awoken. Liquids disturbed, some spilled. Small unstable objects displaced. Weak plaster and weak materials crack.
VII	Many are frightened and run outdoors. People walk unsteadily. Pictures thrown off walls, books off shelves. Dishes or glasses broken. Weak chimneys break at roofline. Plaster, loose bricks, unbraced parapets fall. Concrete irrigation ditches damaged.
VIII	Difficult to stand. Shaking noticed by auto drivers. Waves on ponds. Small slides and cave-ins along sand or gravel banks. Stucco and some masonry walls fall. Chimneys, factory stacks, towers, elevated tanks twist or fall.
IX	General fright. People thrown to the ground. Steering of autos affected. Branches broken from trees. General damage to foundations and frame structures. Reservoirs seriously damaged. Underground pipes broken.
X	General panic. Conspicuous cracks in ground. Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges are destroyed. Serious damage to dams, dikes, and embankments. Railroads bent slightly.
XI	General panic. Large landslides. Water thrown out of banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flatland. General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.
XII	General panic. Damage nearly total, the ultimate catastrophe. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

Source: California Department of Conservation, Division of Mines and Geology, 1973.

Magnitude ¹	Maximum Expected Intensity ²	Distance Felt (kilometers)
2.0 – 2.9	I – II	0
3.0 – 3.9	II – III	15
4.0 – 4.9	IV – V	80
5.0 – 5.9	VI – VII	150
6.0 – 6.9	VII – VIII	220
7.0 – 7.9	IX – X	400
8.0 – 8.9	XI - XII	600

Source: United States Geologic Survey, Earthquake Intensity Zonation and Quaternary Deposits, Miscellaneous Field Studies Map 9093, 1977.

Notes:

1. Richter magnitude.
2. Modified Mercalli intensity scale.

Faults Affecting the Solvang Area

A fault is a fracture along which the blocks of crust on either side have moved relative to one another parallel to the fracture. An earthquake is the term used to describe both sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip.

The age of latest displacement is the most commonly used criterion for estimating the future probability of an earthquake on an individual fault. As outlined below, faults are divided into four classes in order of increasing age since the last movement.

Historically Active (HA) - Faults for which destructive earthquakes within historic time are reasonably well documented are classified as historically active.

Active (A) - Faults that show evidence of displacement during the most recent epoch of geologic time (Holocene or Recent epoch) are classified as active. The Recent epoch began approximately 11,000 years ago.

Potentially Active (PA) – Faults which displace deposits of late Pleistocene age and show no evidence of Recent (0 to 11,000 years old) movement are considered potentially active.

Inactive - Faults that only displace rocks of early Pleistocene age or older (500,000 years old or older) and show no evidence of more recent movement are classified as inactive.

The Transverse Range geologic province is bisected by the San Andreas fault as well as by a number of east-west trending faults (Figure 3). A number of other faults are found in the Santa Barbara region, including the Big Pine and Santa Ynez faults. Numerous other faults are located along the coastal portion of this region and offshore in the vicinity of the Channel Islands. Table 3 summarizes the key features of faults located in the Santa Barbara region that could affect Solvang.

Table 3 -- Regional Faults and Potential Maximum Credible Earthquake		
Name	Length (miles)	Estimated Richter Magnitude of Maximum Credible Earthquake ¹
Historically Active (HA)		
San Andreas	620	8.4
Big Pine	53	7.1
Active (A)		
Big Pine Extension	70	7.2
Graveyard-Turkey Trap	7	5.6
Mesa	4+	5.0+
More Ranch	9+	5.8+
Nacimiento	170	7.6
Pacifico	13+	6.3+
Santa Cruz Island	13+	6.3+
Santa Rosa island	12+	6.2+
Santa Ynez	75+	7.2+
Potentially Active (PA)		
Arroyo Parida	24+	6.6+
Bradley Canyon	5	5.2
Carpinteria	3+	4.5+
Goleta	3	4.5
Mission Ridge	5+	5.2+
Red Mountain	13+	6.3+
Rincon Creek	15+	6.4+
San Jose	9	5.8
Source: Santa Barbara County Seismic Safety and Safety Element, 2009		
Notes:		
1. Based on Housner's relationship between fault rupture length and Richter magnitude assuming the maximum credible earthquake results from		

ruptures along 50% of the fault length.

Table 3 suggests that Solvang is located in a region with a high potential for seismic events.

Figure 3 – Faults in the Santa Barbara County Region

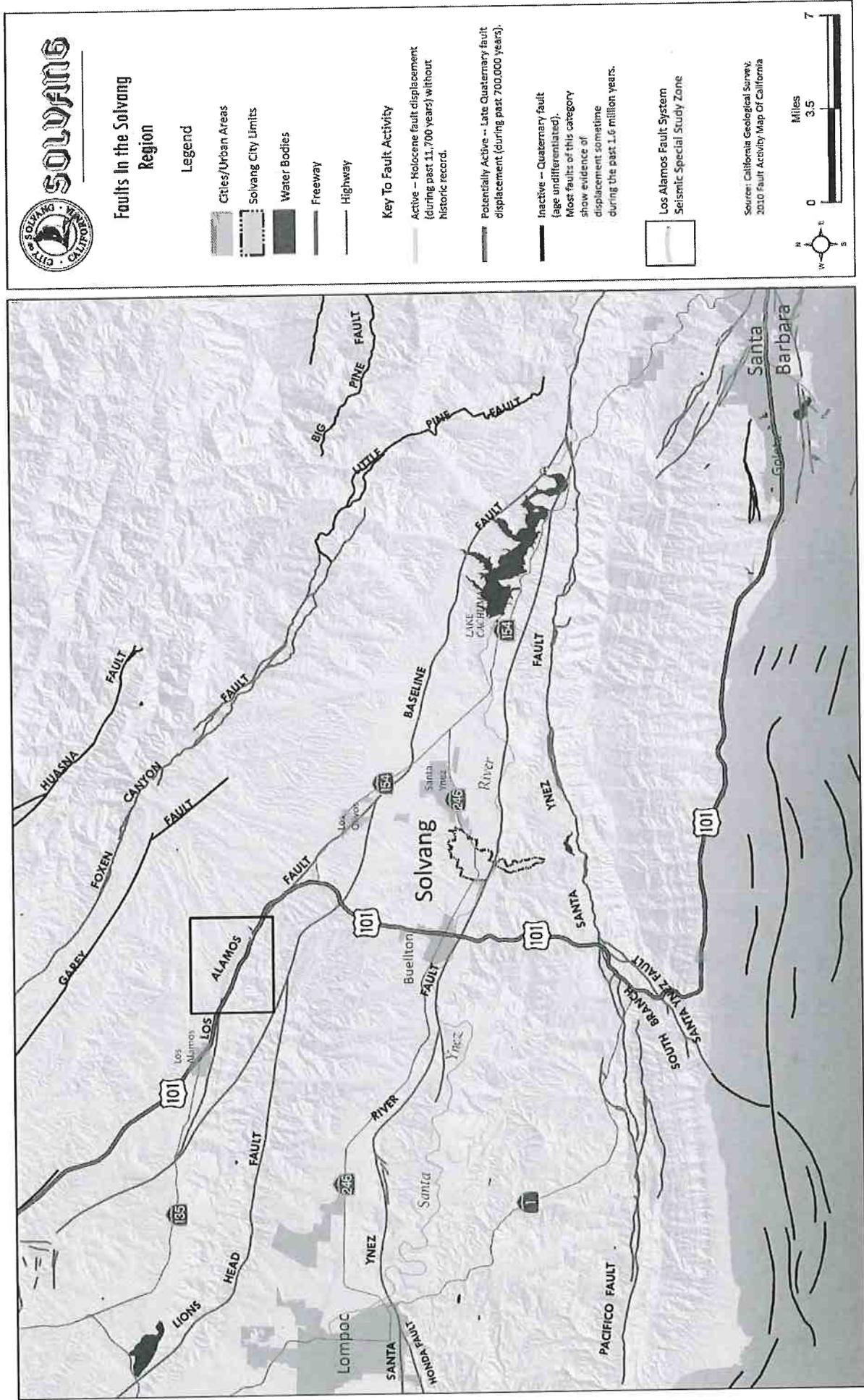
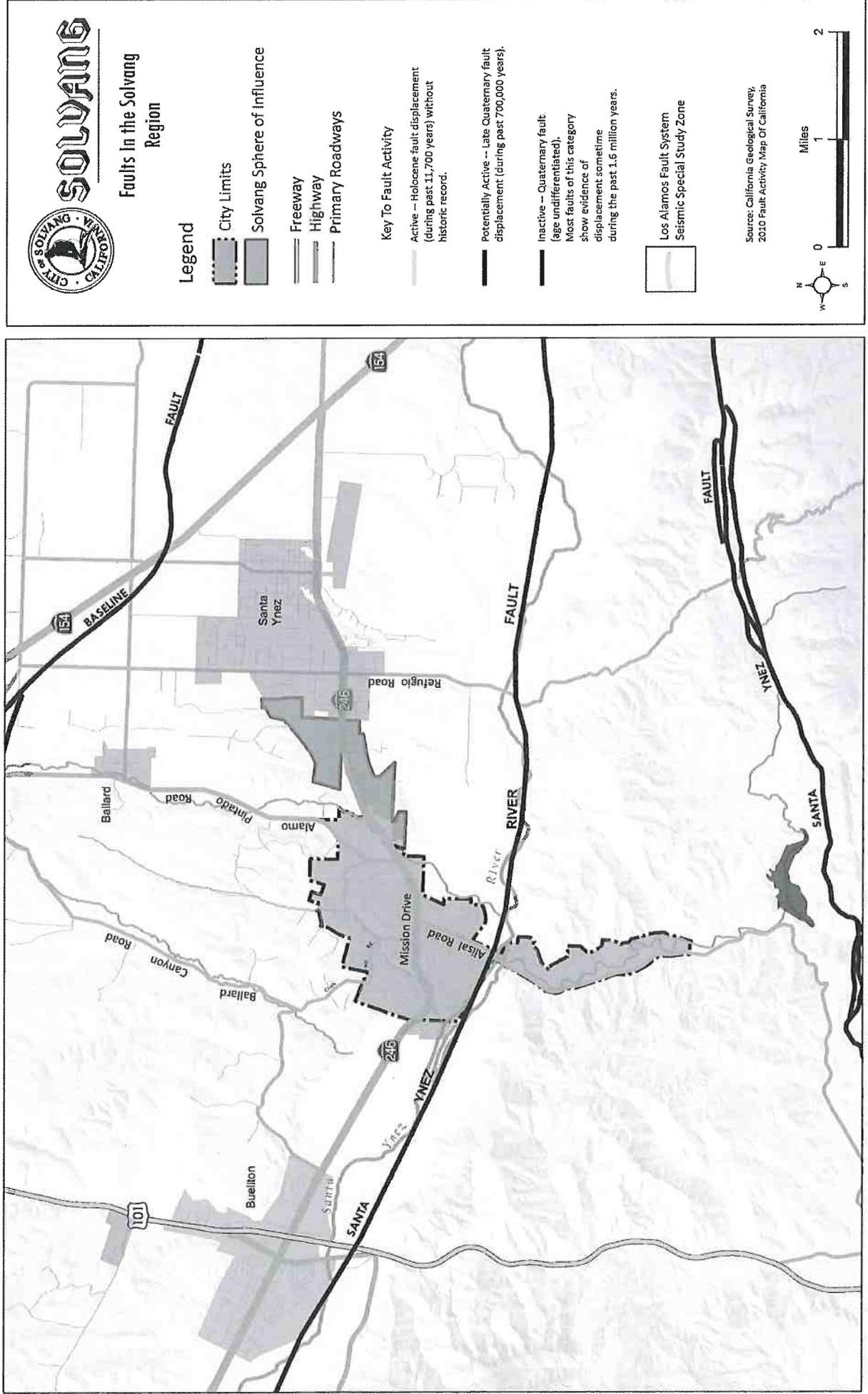


Figure 4 - Faults in the Solvang Area



History of Seismic Events In the Santa Barbara County Region

Seismically related problems, including reported ground rupture and effects of ground shaking, have occurred on occasions during historic time in Santa Barbara County. Other seismically related problems - such as creep along fault tract traces and liquefaction of the soils under seismic shock - are not known to have damaged structures in the County in the past. Table 4 provides a summary of historic seismic events in the region.

Table 4 – History of Seismic Events In the Santa Barbara County Region		
Year	Location	Richter Magnitude ¹
1812	Santa Barbara Channel	7.1
1902	North of Santa Ynez fault	5.5
1925	Santa Barbara Channel	6.2
1926	East of Santa Barbara	5.5
1927	Offshore west of Point Arguello	7.3
1941	Southeast of Santa Barbara	5.9
1968	Santa Barbara Channel	5.2 ²
1973	Point Mugu	5.9

Source: Santa Barbara County Seismic Safety and Safety Element, 2009

Notes:

1. Richter magnitudes for earthquakes prior to 1941 are estimated based on historical data and are not the result of actual measurements.
2. The 5.2 earthquake of 1968 was the largest of a swarm of 63 earthquakes with magnitudes exceeding 1.5 which occurred in the Santa Barbara Channel area during the summer of 1968.

The 1812 earthquake is estimated to have been a 7.1 magnitude quake. It reportedly resulted in major damage to adobe buildings such as the Missions in the southern California area. In particular, the Mission La Purisima in the Lompoc area was destroyed.

More recently, the 1925 earthquake took thirteen lives and caused extensive damage in Santa Barbara and surrounding areas. Damage estimates range from more than \$6 million to \$20 million.

1.2.4 Seismic Hazards

Earthquake Probability

In 2007, the 2007 Working group on California Earthquake, a multi-disciplinary collaboration of scientists and engineers, published the Uniform California Earthquake Rupture Forecast (UCERF) - the first comprehensive framework for comparing earthquake likelihoods throughout all of California. The UCERF provides important information for improving seismic safety engineering, revising building codes, setting insurance rates, and helping communities prepare for inevitable future earthquakes. According to the UCERF, California has a 99.7% chance of having a magnitude 6.7 or larger earthquake during the next 30 years (Figure 5). The likelihood of an even more powerful quake of magnitude 7.5 or greater in the next 30 years is 46%. Such a quake is more likely to occur in the southern half of the state (37% chance in 30 years) than in the northern half (15% chance in 30 years). The colors on Figure 5 represent the UCERF probabilities of having a nearby earthquake rupture (within 3 or 4 miles) of magnitude 6.7 or larger in the next 30 years. As shown in Figure 5, the UCERF suggests that the Solvang area has between a 5% - 10% probability of experiencing an earthquake of magnitude 6.7 over the next 30 years.

Surface Rupture

Surface rupture is an actual crack or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. If a structure is built over a "creeping" fault—one that moves in a series of very small earthquakes rather than as the result of a strong shock—the damage may not be noticed for some time.

As discussed in the Regulatory Setting, the CGS has mapped one seismic special study zone in Santa Barbara County along the Los Alamos fault located about 10 miles north of the City of Solvang (Figure 3) east of the community of Los Alamos.

Groundshaking

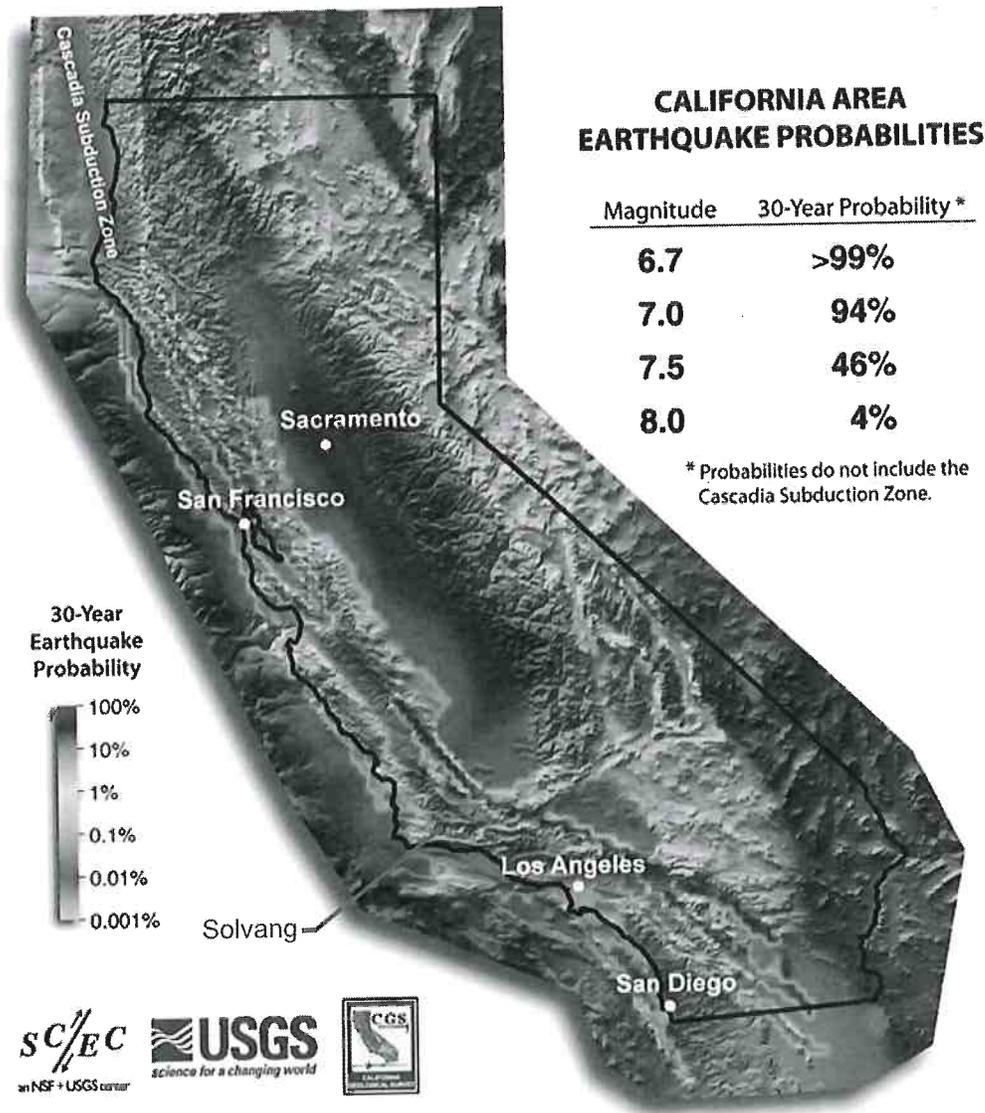
The most serious direct earthquake hazard is the damage or collapse of buildings and other structures caused by groundshaking, which is the vibration radiating from the epicenter of an earthquake. Damage to structures from groundshaking is caused by the transmission of earthquake vibrations from the ground into the structure. The intensity of the vibration or shaking and its potential impact on buildings 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.

Urban development on alluvial deposits in the Solvang area is likely to experience a greater degree of ground shaking than Solvang's hillside areas during an earthquake. Properties near the Santa Ynez River are located on alluvium deposits of varying depths which can increase the potential from ground shaking damage. As earthquake waves pass from more dense rock to less dense alluvial or water-saturated materials, they tend to reduce in velocity, increase in amplitude, and accelerate more rapidly. Ground motion lasts longer and waves are amplified on

loose, water-saturated materials than on solid rock. As a result, structures located on these types of materials suffer greater damage than those located on solid rock. As a consequence, structures built on the alluvial soils along the Santa Ynez River and Alamo Pintado Creek could experience more damage than those built in hillside areas. However, ground shaking in hillside areas could induce the slumping of geologic structures or landslides in areas of slope instability.

Figure 5 -- Earthquake Probabilities for California



As discussed above, the City is located in Seismic Zone 4 as mapped by the California Geological Survey; accordingly, any future development, rehabilitation, reuse, or possible change of use of a structure would be required to comply with all design standards applicable to Seismic Zone. Older buildings constructed before building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are the most likely to suffer damage in an earthquake. Older masonry buildings without earthquake-resistant reinforcement are the most susceptible to the sort of structural failure which causes the greatest loss of lives. Most of Solvang's buildings are one or two stories high and are of wood frame construction, which is considered the most structurally resistant to earthquake damage. All unreinforced masonry buildings in Solvang have been retrofitted to meet current building codes, except the Mission Santa Ines.

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 groundshaking. The susceptibility of a structure to damage from earthquake groundshaking is also related to the foundation material underlying the structure. A foundation of rock or very firm material intensifies short period motions, which affect the low-ridged buildings more than tall, flexible ones. A deep layer of water-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.

Fire is often the major form of damage resulting from groundshaking effects. Ninety percent of the destruction in the 1906 San Francisco earthquake was caused by fire. This devastation resulted largely from the great number of buildings constructed of combustible materials, damage to much of the city's firefighting facilities, and the rupture of water mains. Most earthquake-induced fires start because of ruptured power lines, damage to wood, gas, or electrical stoves, and damage to other gas or electrical equipment. This points out the need for greater emphasis on non-combustible material and on special construction techniques so that water mains will remain unbroken during large earthquakes. Critical facilities (Figure 1), such as hospitals and fire stations, need to be sited, designed, and constructed to withstand severe groundshaking.

Building Collapse

Unreinforced masonry (URM) buildings and structures located in geologically hazardous areas are subject to structural failure during geologic events such as earthquake fault displacement, landslide, or soil liquefaction. URM buildings are considered the foremost threat to life because of their poor performance during earthquakes. Although not every URM building will collapse in a significant earthquake, a large number of these building types will have some degree of life threatening failure.

For URM buildings identified as critical facilities, such as fire stations and hospitals, this potential threat is more significant as these structures are needed during the response to emergencies. Recognizing the danger posed by a significant number of potentially hazardous buildings in California, the State legislature enacted the Unreinforced Masonry Building Law in 1986 (Senate Bill 547 [Alquist], GovernmentCodeSection8875). The law required cities and counties in Seismic Zone 4 to identify and inventory certain older and potentially hazardous buildings through an earthquake loss reduction program. This law refers to the 1988 UBC classification map of earthquake intensities from Zone 0 through 4 (USGS OFR 95 596). For example Zone 4 is the highest risk area, Zone 3 is the next highest risk area, and no earthquake requirements are provided for Zone 0. The City of Solvang is located entirely in Seismic Zone 4.

As discussed above, all unreinforced masonry buildings in Solvang have been retrofitted to meet current building codes except for the Mission.

The State Seismic Safety Commission has stated that jurisdictions that choose to address hazards beyond those of URM buildings will further reduce death, injury, and economic loss; they will help protect California's architectural and historic resources from earthquake hazards. With respect to new construction, the 2013 CBC Section 16—Structural Design requires that construction projects be classified on the basis of the proposed building use and local geologic conditions. Once the classification is completed, the specific building design process related to seismic concerns can be finalized. Based on the risk associated with seismic activity within the City, construction has to meet specific requirements of the CBC.

Liquefaction

Liquefaction is the loss of soil strength due to seismic forces acting on water-saturated granular soils. This loss of strength leads to a "quicksand" condition which causes many types of ground failure. When the liquefied granular layer occurs at the surface, objects can either sink or float depending on their density.

The evaluation of potential for liquefaction is complex and must consider soil type, soil density, groundwater table, and the duration and intensity of shaking. Liquefaction is most likely to occur in deposits of weak saturated alluvium or similar deposits of artificial fill. Liquefaction potential within Solvang exists in low-lying areas along the Santa Ynez River and tributary streamcourses composed of unconsolidated, saturated, clay-free sands, and silts (Figure 6). The area along Alamo Pintado Creek is of particular concern due to the historical presence of high groundwater levels. However, liquefaction has not been documented anywhere within the county.

Settlement

Settlement is the compaction of soils caused by groundshaking. It occurs irregularly and may be partly controlled by bedrock surfaces, and old lake, slough, swamp, and stream beds. The amount of compaction may range from a few inches to several feet. Irregular compaction is most widespread and extreme in major earthquakes. It may occur as much as 75 to 80 miles from the epicenter of an earthquake and may amount to several feet even at that distance. Compaction is most likely to occur in areas which are underlain by soft water-saturated low-density alluvial material, such as along the Santa Ynez River and the creeks that pass through the City.

Lurch Cracking and Lateral Spreading

Lurch cracking refers to fractures, cracks, and fissures produced by groundshaking, settling, compaction of soil, and sliding and may occur many miles from the epicenter of an earthquake. These effects are characteristic of earthquakes large enough for significant ground motion to occur. The larger the earthquake magnitude, the more extensive the effects tend to be. Thus, a major earthquake may damage streets, curbs, sewer, gas, and water lines.

Lateral spreading is the horizontal movement or spreading of soil toward an open face such as a stream bank, the open side of fill embankments, or the sides of levees. Artificial fill areas which are improperly engineered or which have steep, unstable banks are most likely to be affected. The potential for lurch cracking and lateral spreading is highest in areas where there is a high groundwater table, relatively soft and recent alluvium deposits, and where creek banks

are relatively high. In Solvang these areas are located along the Santa Ynez River, Adobe Canyon Creek, Alisal Creek and Alamo Pintado Creek.

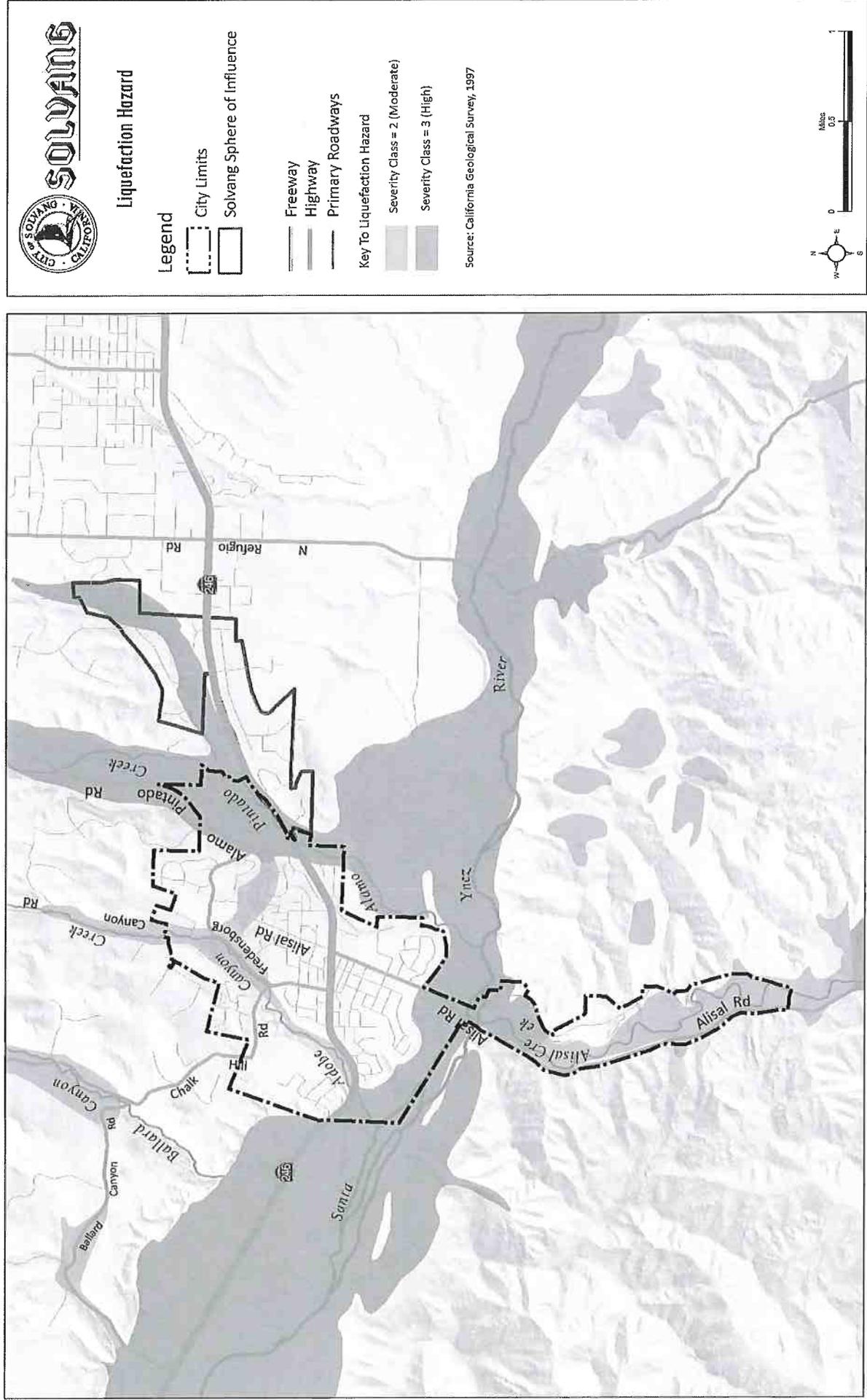
Figure

6

Liquefaction

Risk

Areas



Fracture patterns from lurch cracking and lateral spreading may be controlled by the configuration of shallow bedrock structures, by highway surfacing, by the margins of fill, and engineering structures.

Lurch cracking and lateral spreading are natural occurrences that occur over time, and it is unlikely that they could occur from a single event. Lurch cracking or lateral spreading could occur in areas of the City situated on alluvial deposits.

Landslides

Landslides are the downslope movement of geologic materials. Typically, such movement occurs as block glide (in which slope failure occurs along a planar surface and the mass of materials slides as a single block) or as a slump (in which slope failure occurs along single or multiple surfaces and the mass of materials slides in a rotational motion). The stability of slopes is related to a variety of factors, including the slope's steepness; the strength of geologic materials in terms of resistance to the downslope stress of gravity; the characteristics of bedding planes, joints, and faults; surface water and groundwater conditions; changes in loading (eg., building construction); changes in vegetation (eg., wild-fire, grading, and overgrazing); exposure to weathering; and susceptibility to disturbances such as seismic shaking.

Several landslides have been mapped in the hillside area east of Alisal Creek which is outside the City limits and Plan Area. These represent areas where the use of corrective grading and engineering practices would be necessary to ensure the safety of future development.

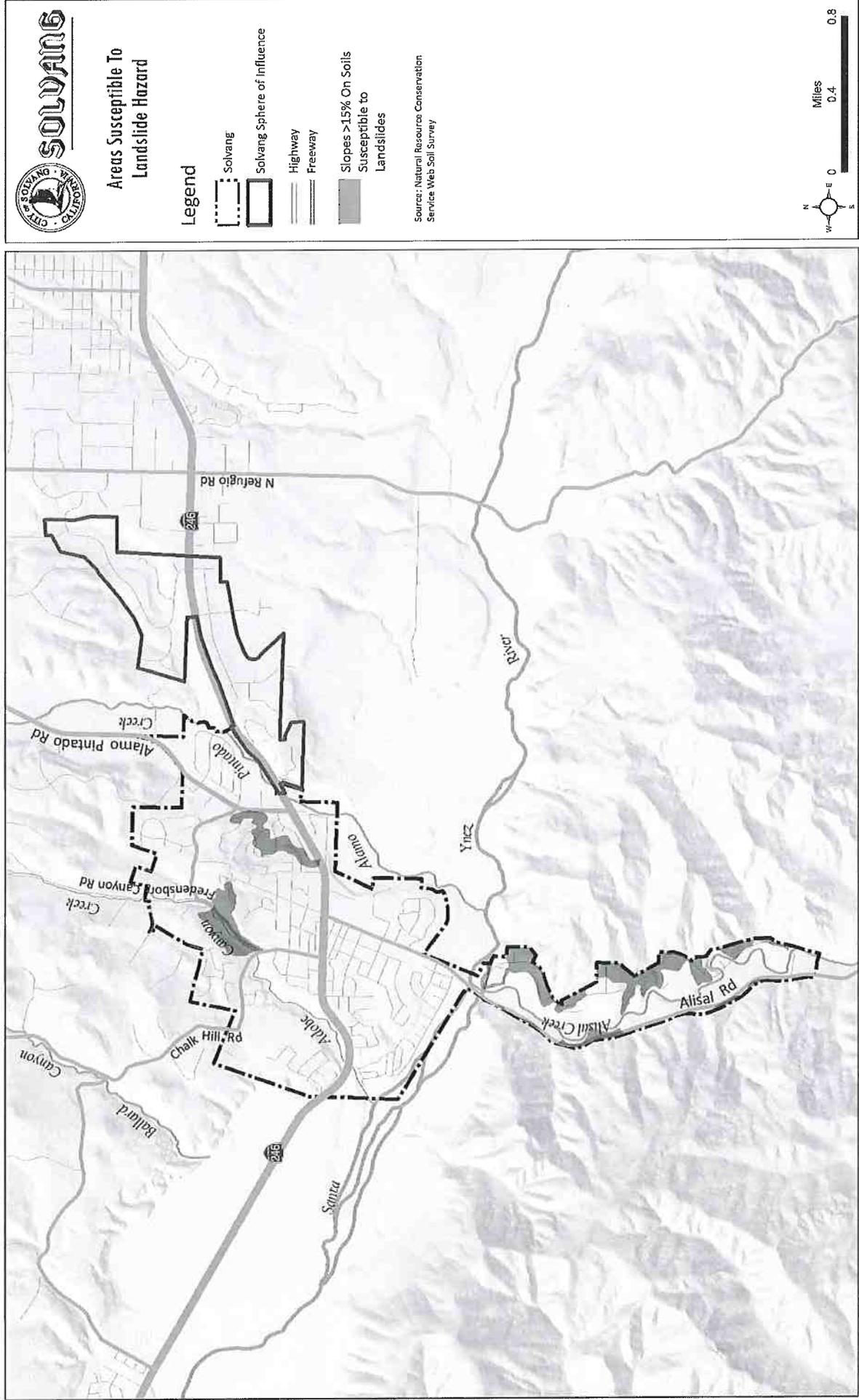
In addition to landslides, other slope stability problems found in hillside areas include soil creep, earthflows and mudflows. Soil creep is the slow downslope movement of individual soil particles at varying rates. This type of movement does not involve sudden slippage such as that associated with landslides, but instead involves the gradual movement of soil particles which eventually changes the surface of affected hillsides. Areas in the City's plan area where soil creep may be a concern are those with expansive soils on relatively steep slopes (Figure 9).

Seiches

A seiche is an earthquake-generated wave within enclosed or restricted bodies of water. Major, and even moderate earthquakes, miles away from the City, can produce oscillations or waves in local bodies of water which could overtop and damage structures and cause water to inundate surrounding areas.

The bodies of water most susceptible to seiches in or near Solvang are the Santa Ynez River, Cachuma Lake/Bradbury Dam and Alisal Lake. The danger of seiches during seismic events is limited to those periods when the river and lakes are full during the flood season. The risk of flooding in Solvang as a result of the overtopping of the Santa Ynez River and the two lakes is considered very remote.

Figure 7 - Areas of Landslide Risk



1.2.5 Soil Related Hazards

All soils have certain engineering properties and characteristics such as erosion potential, shrink-swell behavior, and permeability, which determine their suitability and constraints for building sites, loads, grading, and drainage systems. The susceptibility of certain land areas to erosion and ground failure is in part determined by the type of soils present. The Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) has mapped individual soil units in the City's Plan Area. Soils of the Solvang planning area are shown on Figure 8 and summarized in Table 5.

Soil Erosion

Erosion refers to the removal of soil from exposed bedrock surfaces by water or wind. Erosion occurs naturally in most systems, but is often accelerated by human activities that disturb soil and vegetation. The rate at which erosion occurs is largely a function of climate, soil cover, slope conditions, and inherent soil properties such as texture and structure. For example, the effects of erosion are intensified with an increase in slope (as water moves faster, it gains momentum to carry more debris), the narrowing of runoff channels (which increases the velocity of water), and by the removal of groundcover, which leaves the soil exposed. Erosion potential is generally higher in the hillside areas of the City, but should be identified on a case-by-case basis, depending on the aforementioned factors. Soil units found within the City's Plan Area generally have a slight to moderate potential for erosion as summarized on Table 5. Small areas with a severe potential for erosion are shown on Figure 10.

Shrink/Swell Potential (Expansive Soils)

Certain soils which include clay materials tend to swell when their moisture content increases and shrink when moisture decreases. In particular, soils in the Plan Area associated with the Positas, Santa Ynez, Tierra, Cropley and Diablo formations typically have a moderate to high shrink-swell potential.

As moisture content varies, the resultant shrinking and swelling of the soils (expansive soils) can cause extensive damage to structures built over such material. For example, floor slabs may be heaved or cracked, walls and ceilings may be cracked and doors and windows may not open due to the structural movement caused by expansive soils. Figure 9 shows areas of the City with expansive soils. These areas are generally north of Highway 246 in the area east and west of Alamo Pintado Road.

Figure 8 -- Soils of the Solvang Area

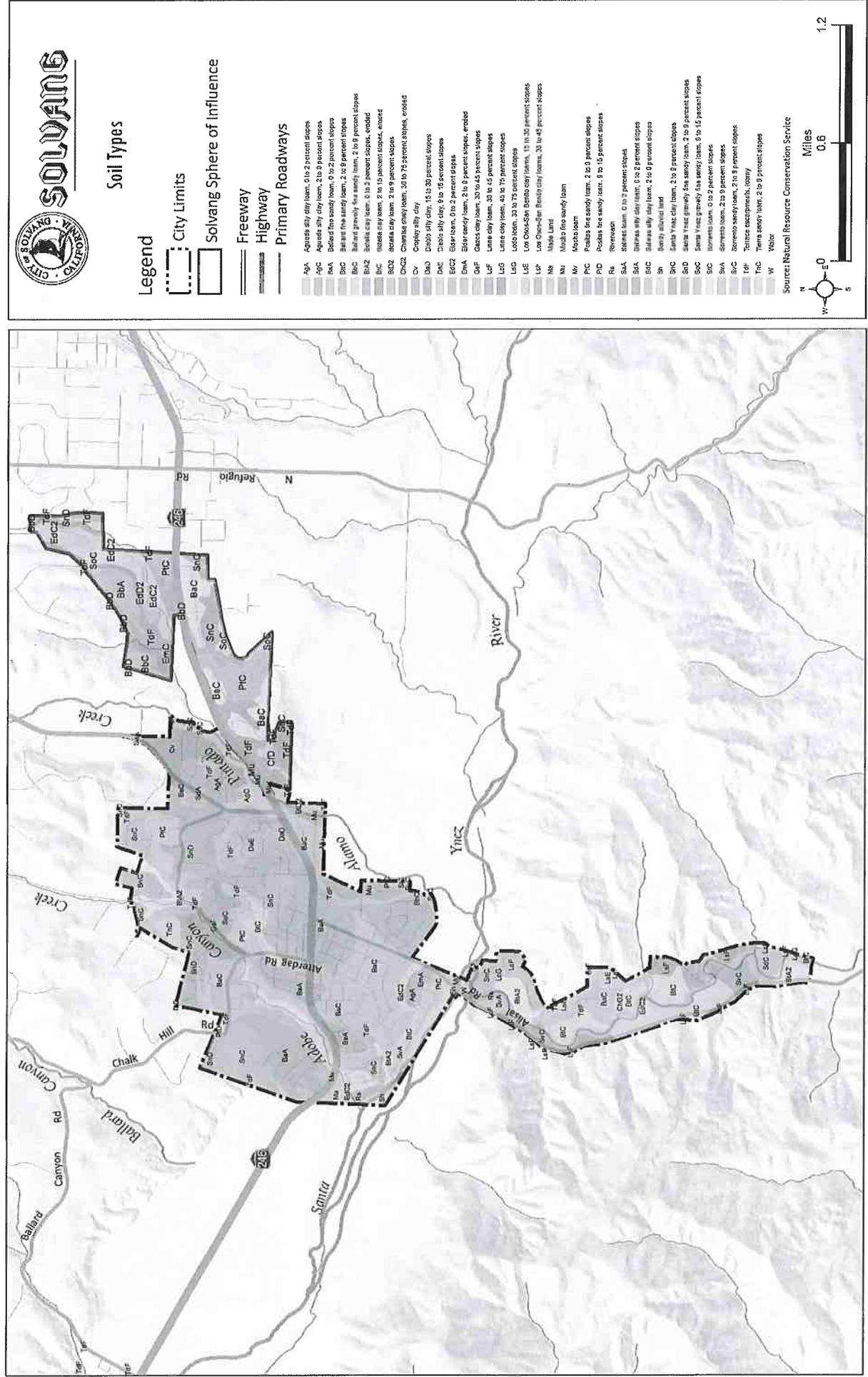
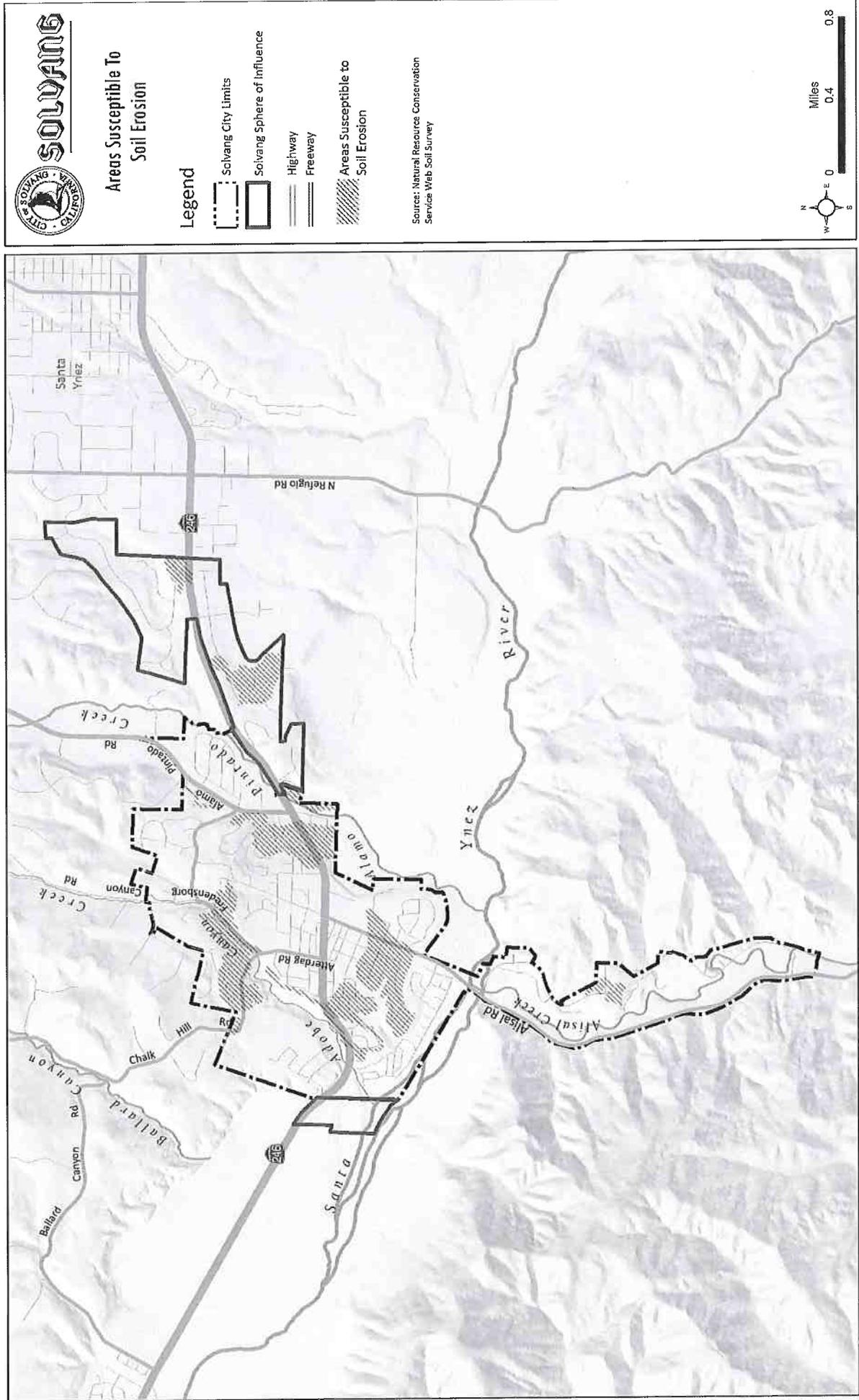


Figure 10 – Areas Susceptible To Soil Erosion



**Table 5 -- Soil Types Within the Solvang General Plan Area,
And Their Susceptibility to Erosion and Shrink/Swell**

Soil Type	Acres	Susceptibility to Erosion ¹	Shrink-Swell Potential ²
Terrace Escarpments, loamy	345	Slight	Slight
Ballard Fine sandy loam, 0 to 2 percent slopes	229	Slight	Slight
Ballard Fine sandy loam, 2 to 9 percent slopes	221	Moderate	Slight
Santa Ynez gravelly fine sandy loam, 2 to 9 percent slopes	188	Moderate	Slight
Santa Ynez gravelly fine sandy loam, 9 to 15 percent slopes	139	Moderate	Slight
Positas fine sandy loam, 2 to 9 percent slopes	91	Moderate	Severe
Botella sandy fine loam, 2 to 9 percent slopes	86	Moderate	Slight
Elder sandy loam, 2 to 9 percent slopes	86	Moderate	Slight
Botella sandy fine loam, 0 to 2 percent slopes	47	Slight	Slight
Cropley silty clay	41	Slight	Severe
Agueda silty clay loam, 0 to 2 percent slopes	36	Slight	Slight
Los Osos-San Benito clay loams, 30 to 45 percent slopes	33	Slight	Slight
Gazos clay loam, 30 to 34 percent slope	32	Severe	Slight
Sorrento loam, 2 to 9 percent slopes	26	Slight	Slight
Diablo silty clay, 15 to 30 percent slopes	25	Sever	Slight
Sand alluvial land	22	Slight	Slight
Ballard gravelly fine sandy loam, 0 to 2 percent slopes	22	Slight	Slight
Los Osos-San Benito clay loams, 15 to 30 percent slopes	21	Slight	Slight
Sorrento loam, 0 to 2 percent slopes	21	Slight	Slight
Linne clay loam, 30 to 45 percent slopes	19	Slight	Slight
Agueda silty clay loam, 2 to 9 percent slopes	16	Slight	Slight
Diablo silty clay, 9 to 15 percent slopes	11	Severe	Severe
Salinas silty clay loam, 2 to 9 percent slopes	10	Slight	Slight
Tierra sandy loam, 2 to 9 percent slopes	10	Slight	Severe
Ballard gravelly fine sandy loam, 2 to 9 percent slopes	10	Slight	Slight
Ballard gravelly fine sandy loam, 9 to 15 percent slopes	8	Slight	Slight
Botella sandy fine loam, 2 to 15 percent slopes	8	Severe	Slight
Santa Ynez clay loam, 2 to 9 percent slopes	7	Slight	Moderate
Elder loam, 0 to 2 percent slopes	13	Slight	Slight
Elder sandy loam, 9 to 15 percent slopes, eroded	6	Slight	Slight
Chamise shaly sandy loam, 9 to 15 percent slopes	5	Slight	Slight
Mocho loam	5	Slight	Slight
Salinas silty clay loam, 0 to 2 percent slopes	5	Slight	Slight
Linne clay loam, 45 to 75 percent slopes	3	Slight	Slight
Positas fine sandy loam, 9 to 15 percent slopes	3	Severe	Slight
Mocho fine sandy loam	2	Slight	Slight

Botella clay loam, 2 to 15 percent slopes, eroded	1	Severe	Slight
Other	124		
Total Acres:	1,977		

Source: Natural Resource Conservation Service, Web Soil Survey, 2014;
<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Notes:

1. The susceptibility to erosion is described as "slight," "moderate," or "severe." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely and simple erosion-control measures are needed and "severe" indicates that significant erosion can be expected (roads may require frequent maintenance; costly erosion-control measures may be needed for new construction).
2. The potential for the soil to shrink or swell is described as "slight," "moderate," or "severe." A rating of "slight" indicates that the capacity of the soil to shrink or swell will pose few limitations under typical construction conditions; "moderate" indicates that some shrink-swell of the soil can be expected, and "severe" indicates a significant limitation to construction.

Subsidence

Subsidence is the sinking of land, usually occurring over broad areas, and therefore, not normally perceptible at the ground surface. Subsidence can be induced by natural processes or by specific human activities. Subsidence of the land surface can result from extraction of groundwater, gas, oil, and geothermal energy. Groundwater withdrawal subsidence is the most extensive type in California. This type of subsidence has been observed only in valley areas underlain by alluvium.

Subsidence can cause a change in gradients affecting the carrying capacities of canals, drains, and sewers. Compaction of sediments at depth has caused extensive damage to water wells in areas where subsidence has been substantial. The magnitude of subsidence depends primarily on the following five factors:

- The magnitude of water level decline;
- The thickness of the alluvium tapped by wells;
- The individual and combined thicknesses and compressibilities of the silt and clay layers within vertical sections tapped by wells;
- The length of time during which water level declines are maintained; and
- The number of occurrences of heavy withdrawals of water in any single area.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) can take the form of long, thin, separable fibers which can be broken down into microscopic particles and suspended in the air through natural weathering or human disturbance. There is no health threat if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function.

Naturally Occurring Asbestos has been identified as a toxic air contaminant by the CARB. Under the CARB *Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations*, prior to any grading activities, a geologic evaluation should be conducted to determine if NOA is present within the area that will be disturbed. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD.

Naturally occurring asbestos may be found in ultramafic rock formations of the Los Padres National Forest located about 30 miles east of the City and outside the City's Plan Area. Accordingly, continued development within the City's planning area is not likely to be affected by naturally occurring asbestos.

1.3 Flooding

Flooding occurs in response to heavy rainfall, when creeks and drainage channels overflow. Flooding may also occur in low-lying areas that have poor drainage, or when culverts become blocked, even during moderate storms. Flood severity can be increased by fires in the watershed, structures or fill placed in flood-prone areas, and increased runoff resulting from development of impervious surfaces (such as parking lots, roads, and roofs). Flood plains are usually described as the area that has a one percent chance of being submerged in any year, which is often called the "100-year flood."

In Solvang, hazardous flooding events are most commonly associated with the Santa Ynez River, Adobe Canyon Creek, Alisal Creek, and Alamo Pintado Creek. Another potential source of flooding is the City's location downstream of Bradbury Dam (Lake Cachuma) and Gibraltar Dam and reservoir (Figure 11).

1.3.1 Important Terms Used In this Section

Exceedance Probability. The probability that a precipitation or runoff event of a specified size will be equaled or exceeded in any given year.

Federal Emergency Management Agency (FEMA). The agency that oversees floodplain management and the national flood insurance program.

Five Hundred Year Flood. The flood magnitude that has a 0.02 percent chance of occurring in any given year.

Flood Insurance Rate Map. Prepared by FEMA for flood insurance and floodplain management purposes.

Floodplain. Land adjacent to a stream, slough, or river that is subject to flooding or inundation.

Floodplain Management. The implementation of policies and programs to protect floodplains and maintain their flood control function.

Frequency. How often a streamflow of particular magnitude will occur, expressed as its return period or exceedance probability.

Level of Protection. The degree of protection that a drainage or flood control measure provides, typically expressed as the largest frequency flow event that can occur without flooding.

One Hundred Year (100year) Flood. The flood magnitude that has a 1 percent chance of occurring in any given year.

Regulatory Floodplain. Typically refers to the floodplain area that would be inundated by the 100year flood event and is designated by FEMA. It also refers to the floodplain area as determined by a State or local agency as their floodplain management area.

Return Period. The statistical estimate of number of years (#year) likely between occurrences of a flood event of equal or greater magnitude.

1.3.2 Regulatory Setting

Federal Regulations

Federal Emergency Management Agency (FEMA). FEMA is the federal agency that oversees floodplains and manages the nation's flood insurance program. FEMA's regulations govern the delineation of floodplains and establish requirements for floodplain management.

State Regulations

California Department of Water Resources (DWR). DWR is the State agency that studies, constructs, and operates regional scale flood protection systems, in partnership with Federal and local agencies. DWR also provides technical, financial, and emergency response assistance to local agencies related to flooding. Several bills were signed by Governor Schwarzenegger in 2007 adding to and amending State flood and land use management laws. The laws contain requirements and considerations that outline a comprehensive approach to improving flood management at the State and local levels (DWR 2010a). Some of the provisions of the 2007 flood risk management legislation apply statewide (including Santa Barbara County), with other provisions that apply only to the Sacramento/San Joaquin Valley, and additional measures specifically for the Sacramento San Joaquin Drainage District (DWR 2010a).

FloodSAFE California is a strategic multifaceted program initiated by DWR in 2006. FloodSAFE is guiding the development of regional flood management plans, which encourage regional cooperation in identifying and addressing flood hazards. Regional flood plans include flood hazard identification, risk analyses, review of existing measures, and identification of potential projects and funding strategies. The plans emphasize multiple objectives, system resiliency, and compatibility with State goals and Integrated Regional Water Management Plans (IRWMP). DWR has the lead role to implement FloodSAFE, and will work closely with State, Federal, tribal, and local partners to help improve integrated flood management systems statewide. DWR's role is to advise and provide assistance as a resource to local jurisdictions as they pursue compliance (DWR 2010a).

Assembly Bill 2140. Under AB2140, a city or county may adopt with its general plan safety element a local hazard mitigation plan (HMP) as specified in the Federal Disaster Mitigation Act of 2000. Compliance with AB2140 is optional. However, a local agency with an adopted HMP is

eligible to receive an additional share of State funding for certain disaster relief projects. The HMP must include an initial earthquake performance evaluation of public facilities that provide basic shelter and critical government functions, an inventory of private facilities that are potentially hazardous, and a plan to reduce the potential risk from private and governmental facilities in the event of a disaster. At a minimum, the safety element goals, policies, and objectives must include (Government Code Section 65302(g)(2)(B)):

- Avoiding or minimizing the risks of flooding to new development.
- Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.
- Maintaining the structural and operational integrity of essential public facilities during flooding.
- Locating, when feasible, new essential public facilities outside flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities; or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.
- Establishing cooperative working relationships among public agencies with responsibility for flood protection.

A city or county may qualify for financial benefits associated with the new regulations under Government Code Section 8685.9 by adopting their Local Hazard Mitigation Plan (LHMP) as an annex, by reference, to their safety element consistent with Government Code Section 65302.6.

Local Regulations

Solvang Municipal Code Flood Plain Management (Title 13, Chapter 1 of the Solvang Municipal Code). The City's flood plain management regulations were enacted to minimize public and private losses due to flood conditions in specific areas. The regulations restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities; require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; control the alteration of natural flood plains, stream channels and natural protective barriers, which help accommodate or channel flood waters; control filling, grading, dredging and other development which may increase flood damage; and prevent or regulate the contribution of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. (Ord. 93-140, 7-12-1993)

1.3.3 Existing Conditions/Floodplain Management

Solvang is located in the western Santa Ynez Valley which is drained primarily by the Santa Ynez River and its tributaries. Flooding is most likely to occur in the late fall and winter as a result of extended periods of precipitation. Historical records indicate that serious flooding has occurred repeatedly on the Santa Ynez River. At least five major floods were recorded during the period of 1812 to 1907. Since 1907, reliable records have been compiled for the river as summarized in Table 6. Historical data for Alamo Pintado Creek, Alisal Creek, and Adobe Canyon Creek are not available. As seen in Table 6, flood events have typically occurred in the winter following periods of intense storms.

Official floodplain maps are maintained by the Federal Emergency Management Agency (FEMA) and provided in Appendix A. FEMA determines areas subject to flood hazards and designates these areas by relative risk of flooding on a map for each community, known as the Flood Insurance Rate Map (FIRM). A 100-year flood is considered for purposes of land use planning and protection of property and human safety. The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms. In mapping the 100-year floodplain, FEMA applies two levels of analysis. Where flooding has the greatest potential to adversely affect life and property, FEMA uses detailed hydraulic analysis to determine the 100-year floodplain. In other areas, approximate methodologies are employed. The analysis of predicted flooding does not account for the effects of continued land subsidence or the rise in sea level associated with climate change.

100-Year Floodplain

The 100-year flood is defined as the flood event that has a one percent chance of occurring in any given year. It is important to note that the delineation of areas within the 100-year floodplain represents a statistical probability for the long-term average occurrence of flooding. Actually, flooding can occur in a 100-year floodplain more or less frequently than once in a one hundred year period. Smaller floods have an even greater chance of occurring in any year and pose hazards as well. Areas that are sporadically flooded only become inundated as a result of more uncommon and extreme precipitation/runoff events.

The flood carrying capacity of the Santa Ynez River and its tributaries has decreased as trees, vegetation, and structures (e.g., bridges, culverts, buildings) have increased. Unsecured and uprooted material can be carried down the river, clogging channels and piling up against culverts and bridge abutments that can, in turn, give way or collapse, increasing blockage and flooding potential. Flooding can force waters out of the river channel and above its ordinary floodplain. Confined floodplains can result in significantly higher water elevations and higher flow rates during high runoff and flood events.

Updated channel analysis has not been performed to determine the amount of obstruction posed by vegetation and development in the Santa Ynez River. As such, the FEMA Flood Insurance Rate Maps (FIRM) maps depicting the 100-year floodplain probably do not reflect the true extent and risk of flooding hazards in area. Figure 12 shows areas of the City that fall within FEMA-designated 100-year flood zone based on the most recent FIRM maps¹. As shown on Figure 12, the floodplain affecting the City's planning area has been determined using both approximate and detailed methods. As shown on Figure 12, 100-year flood zones are located adjacent to the Santa Ynez River and along portions of Alamo Pintado Creek.

It is estimated that a 100-year flood along the Santa Ynez River in the Solvang area would have a peak discharge of approximately 90,000 cubic feet per second (CFS). The depth of water on the floodplain would range between six and thirteen feet. Flow velocities would be approximately fourteen feet per second (or ten miles per hour) in the main channel and five feet per second (or three mph) on the floodplain².

¹ The most recent FIRM maps are provided in Appendix A.

² Flow velocities greater than three feet per second combined with depths of three feet or more are considered hazardous.

A 100-year flood along Alamo Pintado Creek downstream of the confluence of East Branch Alamo Pintado Creek would have a peak discharge of approximately 7,400 cfs. The depth of water on the floodplain would range between one and five feet.

500-Year Flood Hazard

The 500-year flood hazard area is also established by FEMA in the same manner as the 100-year flood hazard area. However, the 500-year flood is defined as the flood event that has a 0.2 percent chance of occurring in any given year. As with the 100-year floodplain, it is important to note that the delineation of areas within the 500-year floodplain zone represents a statistical probability for the long-term average occurrence of flooding. Actually, flooding can occur in a 500-year floodplain more or less frequently than once every five hundred years. Smaller floods (i.e., a 100-year event) have an even greater chance of occurring in any year and pose hazards as well. Areas that are sporadically flooded only become inundated as a result of more uncommon and extreme precipitation/runoff events. As with the 100-year flood zones, 500-year flood zones have been mapped by FEMA along the Santa Ynez River and Alamo Pintado Creek (see Figure 11).

A 500-year flood along the Santa Ynez River in the Solvang area is estimated to involve a peak discharge of approximately 105,000 cfs. The depth of water on the floodplain would range between eight and fifteen feet. Flow velocities would be approximately fifteen feet per second (or ten mph) in the channel and five feet per second (or three mph) on the floodplain.

A 500-year flood along Alamo Pintado Creek downstream of the confluence of East Branch Alamo Pintado Creek would have a peak discharge of approximately 21,200 cfs. The depth of water on the floodplain would range between three and seven feet.

DWR Awareness Floodplains

The DWR Awareness Floodplain maps are for areas that are not currently mapped as a regulated floodplain but, based on approximate assessment procedures, are 100 year flood hazard areas and shown simply as flood prone areas, without specific water depths or other flood hazard information. The DWR awareness floodplain maps are not FEMA regulatory maps, but may be included on FEMA maps at the request of affected communities. Figure 13 depicts the DWR Awareness Floodplain areas within the City's Plan Area. The awareness floodplain areas are generally narrow corridors along stream channels that are connected to, and typically extend up stream/up valley from, the identified FEMA high risk (100 year) floodplains. These DWR mapped floodplains, while developed from approximate methods, are useful indicators of flood prone areas to be avoided and/or studied in detail prior to potential development.

Dam Failure

Another potential source of flooding affecting the City is dam failure. Dam failure can result from numerous natural or human activities, such as earthquakes, erosion, improper siting, rapidly rising flood waters, and structural and design flaws. Flooding due to dam failure can cause loss of life, damage to property, and other ensuing hazards.

There are three dams on the Santa Ynez River upstream from the City: Bradbury Dam (Lake Cachuma), Gibraltar Dam and reservoir and Alisal Lake. Lake Cachuma is the largest reservoir along the Santa Ynez River, with a drainage area of 421 square miles upstream of the Bradbury

Dam. Gibraltar Reservoir has a drainage area of 214 square miles upstream of Gibraltar Dam. A comprehensive analysis of the potential for dam failure and possible downstream effects for these upstream dams has not been undertaken for this Background Report. However, a significant seismic retrofit of Bradbury Dam was completed in 2006 which brought the dam up to federal standards for seismic safety.

Flooding associated with dam failure on one of the local or upstream dams has a low probability for occurrence. Figure 11 shows areas of the City that could be subject to dam inundation in the event of a failure of Bradbury Dam and Alisal Dam which are closest to the City. The potential inundation area includes the areas along the Santa Ynez River and Alisal Creek.

Figure 11 -- Dam Inundation Areas

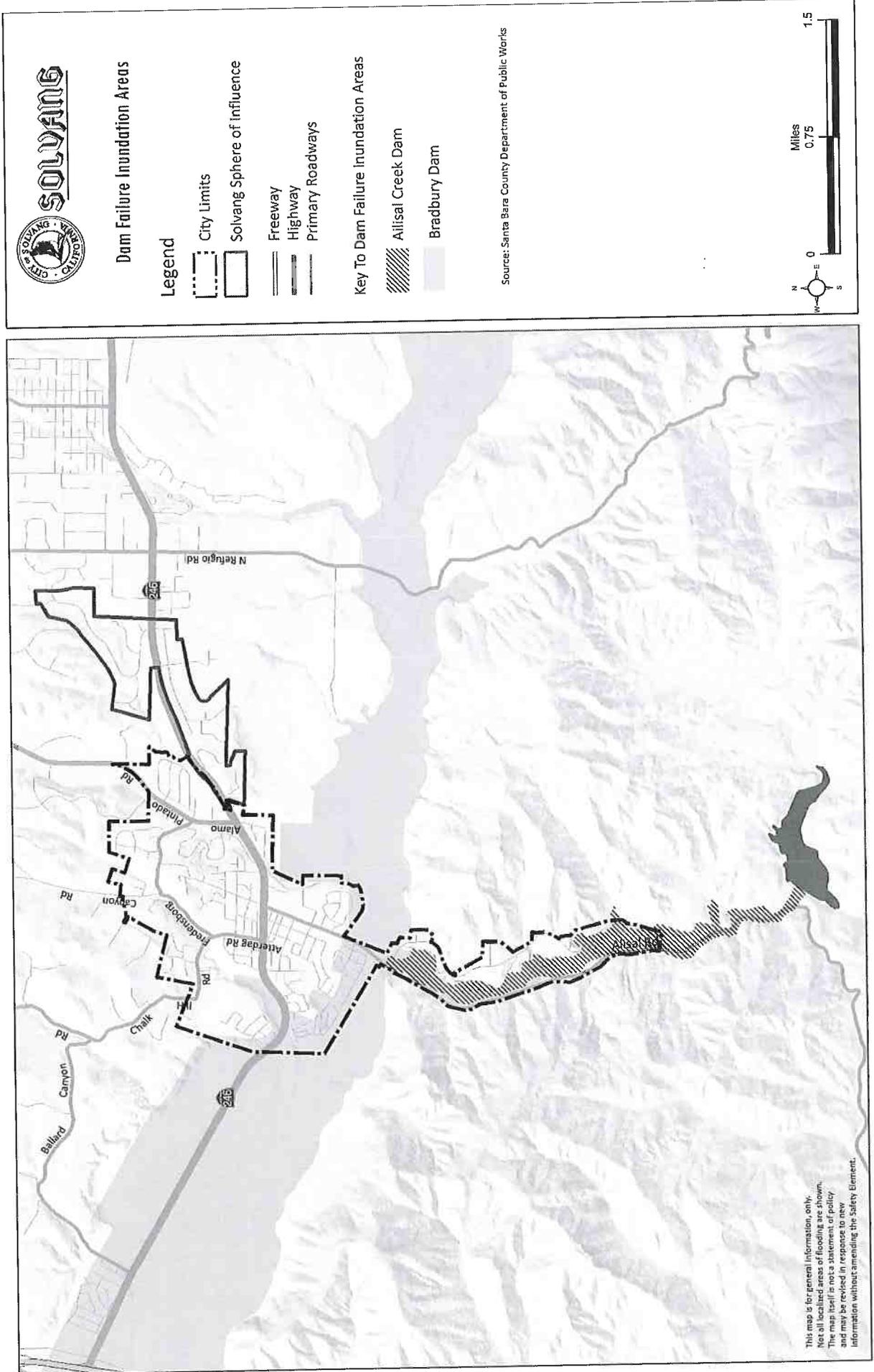


Figure 12 - 100 and 500 Year Floodplains (FIRM maps are provided in Appendix A)

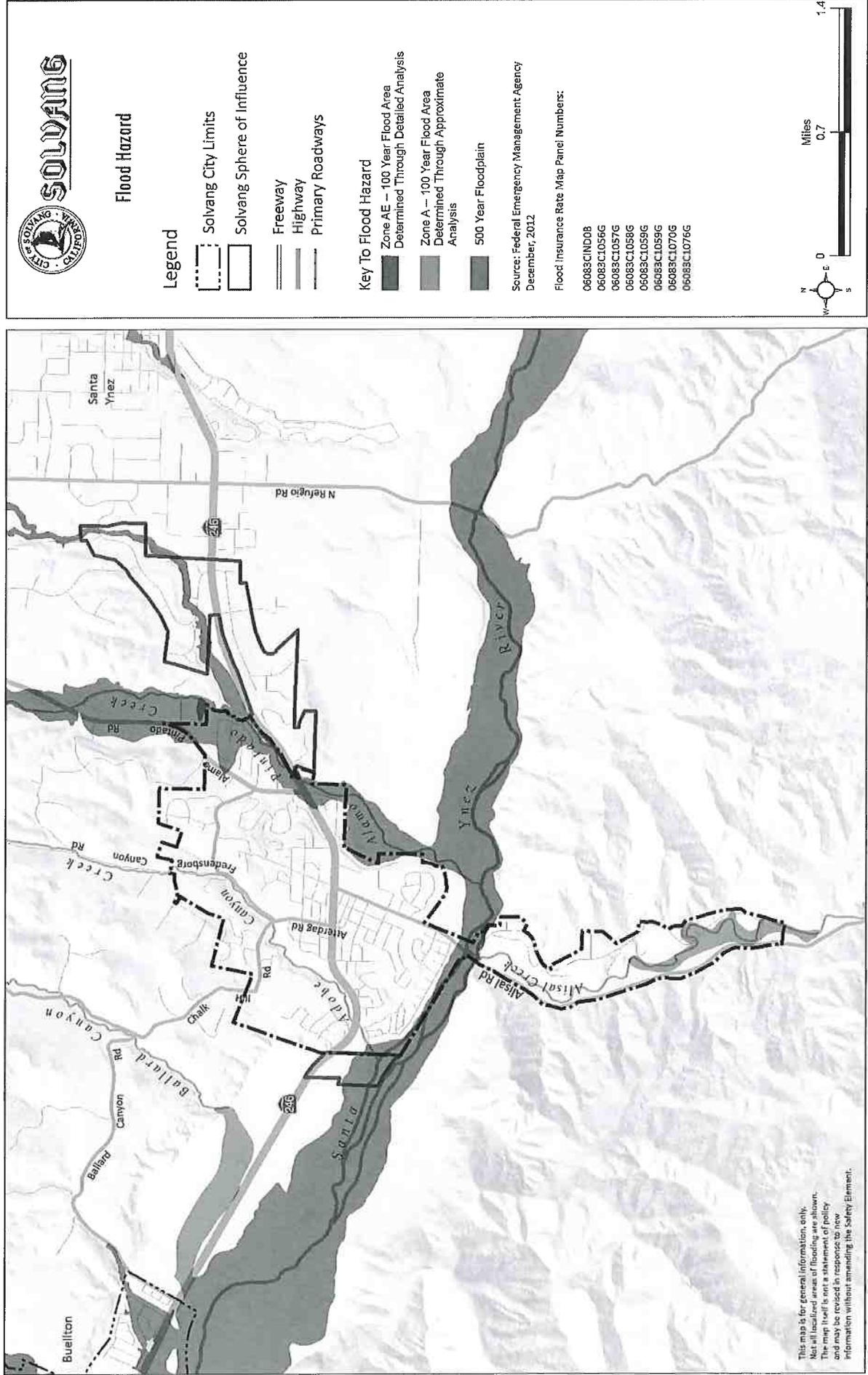


Figure 13 -- DWR Flood Awareness Areas

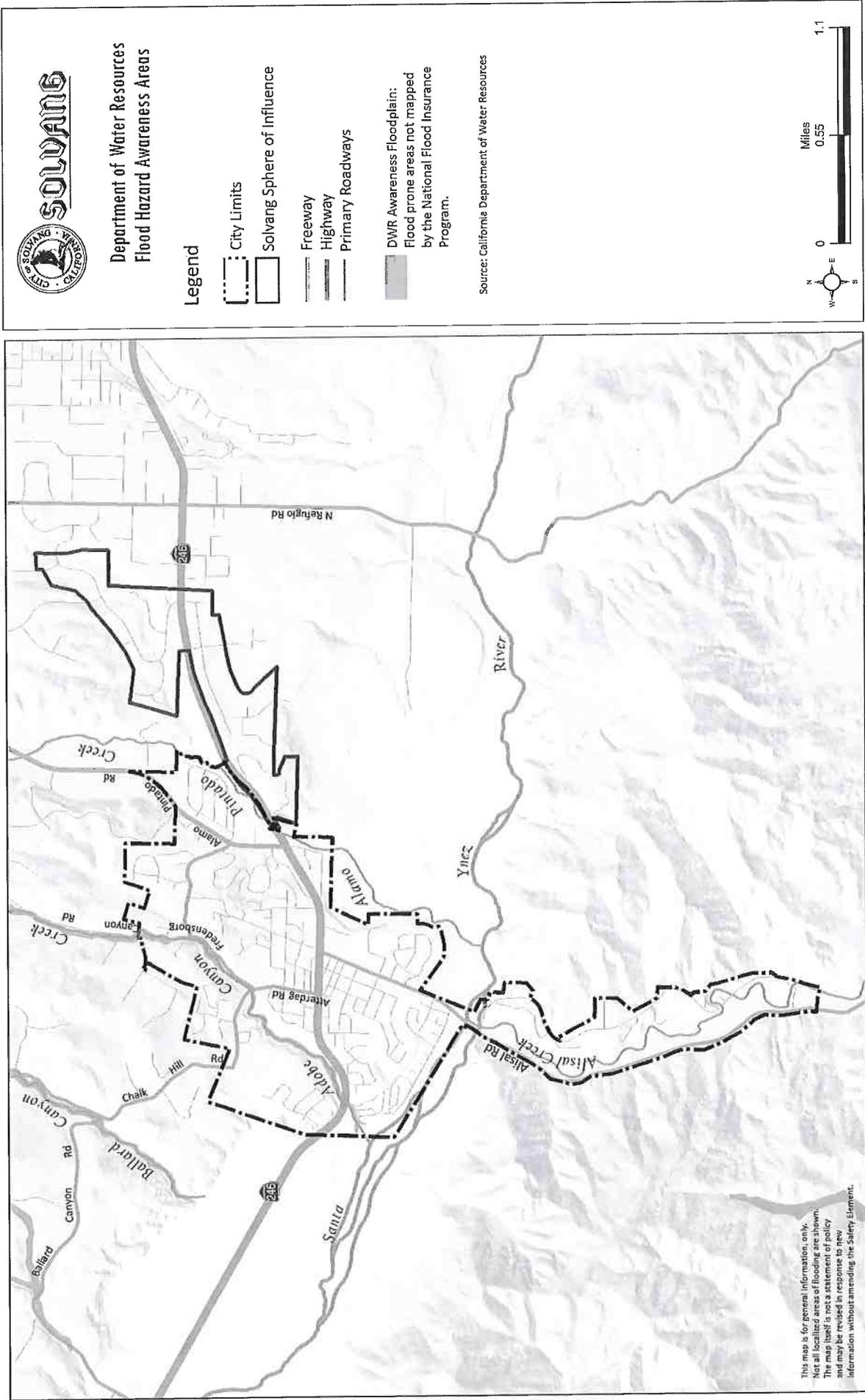


Table 6 -- Historic Flood Events Affecting The Solvang Area

Year	River/Creek Affected	Description
1907	Santa Ynez River	After 4 days of rain, flood flows on the Santa Ynez River engulfed the entire Lompoc Valley. The floods caused significant damage to structures and crops, and all but one of the bridges along the river were washed out.
1938	Regionwide/Santa Ynez River	This was a major flood event for much of Southern California, including Santa Barbara County. The Santa Ynez River near Lompoc estimated peak discharge was 50,100 cfs.
1969	Regionwide/Santa Ynez River	The 1969 storm was equivalent to a 100-year storm in the upper Santa Ynez watershed. The Alamo Pintado Creek and Zaca Creek, along with many of the tributaries of the Santa Ynez River overflowed.
1970	Santa Ynez River	The 1970 floods were caused by a series of Pacific storms that brought severe, widespread damage to the Central Coast and the rest of California. Damage was most severe in the Salinas River Basin, in the Santa Ynez River Group.
1978	Santa Ynez River	Along the Santa Ynez River, 700 acres of agricultural land were damaged with 10 feet of silt and water destruction and over 80 acres of agricultural land was washed away. The Solvang Wastewater Treatment Plant was damaged, including wells, lines and ponds.
2005	Regionwide/Santa Ynez River	Five days of heavy rains during January 7-11, 2005, caused widespread flooding throughout much of Southern California. On February 4, 2005, President Bush declared seven counties in Southern California disaster areas, including Santa Barbara County. Run-off was high from this event because the ground was saturated from heavy storms preceding it. A slowmoving Pacific storm moved into Santa Barbara County in late December and brought with it copious amounts of rain by the time it had moved on in mid-January. By January 12, 320% of normal rainfall totals had been made. All three of the reservoirs on the Santa Ynez River were full and spilling.

Source: California's Flood Future, Attachment C: History of Flood Management in California, 2013

[http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0CFAQFjAG&url=http%3A%2F%2Fwww.water.ca.gov%2Fsfmp%2Fresources%2FAttachment C History Appendices A-F.pdf&ei=fyn1U5D0Mck2ogSPI4DgDQ&usg=AFQjCNGC2pAH7P5L26NGjLB5s7GDhEk2g](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0CFAQFjAG&url=http%3A%2F%2Fwww.water.ca.gov%2Fsfmp%2Fresources%2FAttachment%20C%20History%20Appendices%20A-F.pdf&ei=fyn1U5D0Mck2ogSPI4DgDQ&usg=AFQjCNGC2pAH7P5L26NGjLB5s7GDhEk2g)

1.4 Fire Hazards

1.4.1 Important Terms Used In This Section

Assets at Risk. Assets at risk due to wildfires in California include life and safety; timber; range; recreation; water and watershed; plants; air quality; cultural and historical resources; unique scenic areas; buildings; wildlife; and ecosystem health.

At risk Community. An interface community within the vicinity of Federal lands that is at high risk from wildfire, or a group of homes and other structures with basic infrastructure and services within or adjacent to Federal land where conditions are conducive to large scale wildland fire disturbance, or where a significant threat to human life or property exists as a result of a wildfire fire disturbance event.

California Department of Forestry and Fire Protection (CAL FIRE). The State department charged with protecting the residents of California from fires, responding to emergencies, and protecting and enhancing forest, range, and watershed values providing social, economic, and environmental benefits to rural and urban citizens.

Defensible Space. The area within the perimeter of a parcel where basic wildfire protection practices are implemented, providing the key point of defense from an approaching wildfire or escaping structure fire. Defensible space is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures such as tree trimming and the removal of brush adjacent to residences.

Fire Hazard. A measure of the likelihood of an area burning, and how it burns (e.g., intensity, speed, embers produced), without considering modifications such as fuel reduction efforts. Fire hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause.

Fire Hazard Severity Zones (FHSZ). California Public Resources Code Sections 4201 4204 and California Government Code Section 51175 89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ) then define the range of various mitigation strategies that could be applied to reduce risk associated with wildland fires.

Fire Risk. A measure of the potential for damage a fire can do to the area under existing conditions, including any modifications such as defensible space, irrigation and sprinklers, and ignition resistant building construction.

Fire and Resource Assessment Program (FRAP). Fire and Resource Assessment Program, a branch of the California Department of Forestry and Fire Protection.

Fire Threat. Fire threat is a combination of two factors: fire frequency, or the likelihood of a given area burning, and potential fire behavior (hazard). These two factors are combined to create four threat classes ranging from moderate to extreme.

Fuel. Vegetative material, live or dead, which is combustible during normal summer weather.

Fuel Break. Fuel breaks are wide strips of land on which trees and vegetation have been permanently reduced or removed. These areas can slow, and even stop, the spread of a wildland fire because they provide less fuel to carry the flames. They also provide firefighters with safe zones to take a stand against a wildfire, or retreat from flames if the need arises.

Greenbelts. Areas where vegetation is removed around structures and/or replaced with more fire resistant vegetation.

Level of Service (LOS). The Level of Service (LOS) rating is a ratio of successful fire suppression efforts to the total fire starts. It divides the annual number of small fires extinguished by initial attack by the total number of fires. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred. This is a relative system, attempting to measure the relative impact of fire on the various assets at risk. The level of service rating (the score of successes in initial attacks) can be used to compare one area of the state with another, recognizing that the assets at risk may be quite different.

State Responsibility Areas (SRA). Areas classified by the State Board of Forestry and Fire Protection as being the primary financial responsibility of the State for preventing and suppressing fires. These lands include: lands covered wholly or in part by timber, brush, undergrowth or grass, whether of commercial value or not; lands that protect the soil from erosion, retard run off of water, or accelerated percolation; lands used principally for range or forage purposes; lands not owned by the Federal government; and lands not incorporated. Lands are removed from SRA when housing densities average more than three units per acre over an area of 250 acres.

Wildland Urban Interface. The wildland–urban interface (WUI) is commonly described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. Often a WUI is an area extending one half mile to 1 and one half miles from the boundary of an at risk community, or an area adjacent to an evacuation route for an at risk community.

W.A.F.L. Score. A tool that calculates the combination of four fire plan assessment criteria (weather, assets at risk, fuel, and level of service) into an aggregate score, which can be used to help target areas with high fire hazard, and prioritize projects for ground fuel reduction. Theoretically, those areas with the highest W.A.F.L. score would have the first priority for funding of any given project or pre fire program.

1.4.2 Regulatory Setting

Federal Regulations

Healthy Forests Restoration Act (HFRA). Legislation passed in 2003 that gives incentives for communities to engage in comprehensive forest planning and prioritization. It includes statutory incentives for the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects. The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects.

State

Sections 700 - 716, Public Resources Code. Establishes, generally, the authority of the California Department of Forestry and Fire Protection.

Sections 4125 - 4136, Public Resources Code. Establishes State Responsibility Areas (SRA) requires the development of fire plans to protect them, and places them under the jurisdiction of the California Department of Forestry and Fire Protection.

Section 4290, Public Resources Code. Establishes minimum fire safety standards for development in State Areas of Responsibility (SRA). This includes: 1) road standards for fire equipment access; 2) standards for signs identifying streets, roads, and buildings; 3) minimum private water supply reserves for emergency fire use; and 4) fuel breaks and greenbelts.

Section 4291, Public Resources Code. Requires a minimum of 100 feet of clearance for fire safety surrounding all structures on State responsibility lands in California. The State requirements do not supersede more stringent local regulations.

2007 California Building Code, Chapter 7A, Wildland Urban Interface Fire Area Building Standards. On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations (CCR), Title 24, Part 2, known as the 2007 California Building Code (CBC). These new codes include provisions for ignition resistant construction standards in the wildland urban interface and require implementation of PRC §4291.

701A.3.2 New Buildings Located in Any Fire Hazard Severity Zone. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, any Local Agency Very High Fire Hazard Severity Zone, or any Wildland Urban Interface Fire Area for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter. This includes provisions that the local building official provide certification that the proposed building complies with building standards for materials and construction methods for wildfire exposure prior to construction; that the local building official certify upon completion of construction that the building was constructed in compliance with building standards for materials and construction methods for wildfire exposure; and that prior to building permit final approval, the property is in compliance with vegetation clearance requirements prescribed in PRC §4291.

Section 4740 - 4741, Public Resources Code. Provides for the California Department of Forestry and Fire Protection to assist local governments in the prevention of wildland fires.

Fire Prevention and Suppression. In recognition of the severity of wildland fire hazards in certain areas of California, the State enacted legislation (California Public Resources Code Section 4291) requiring local jurisdictions to adopt minimum recommended standards pertaining to road standards for fire equipment access, standards for identifying streets, roads, and buildings, minimum private water supply reserves for emergency fire use, and fuel breaks and greenbelts to achieve fuel reductions. With certain exceptions, all new development and construction in SRAs after July 1, 1991, must meet the new standards. The State requirements would not supersede more stringent local regulations should they be developed. Changes enacted in 2005 to Public Resources Code Section 4291 expand

the defensible space clearance requirement maintained around buildings and structures from 30 feet to a distance of 100 feet. These guidelines are intended to provide property owners with examples of fuel modification measures that can be used to create an area around buildings or structures to create defensible space. A defensible space perimeter around buildings and structures provide firefighters a working environment that allows them to protect buildings and structures from encroaching wildfires, and minimize the chance that a structure fire will escape to the surrounding wildland. These guidelines apply to any person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining any mountainous area, forest covered lands, brush covered lands, grass covered lands, or any land that is covered with flammable material, and located within a State Responsibility Area.

Wildland Urban Interface Building Standards. In September 2005 emergency regulations amending the California Code of Regulations (CCR), Title 24, Part 2, known as the 2007 California Building Code (CBC), were adopted to bring increased protection to buildings located in WUI areas and reinforce implementation of Public Resource Code Section 4291. The broad objective of the Wildland Urban Interface Fire Area Building Standards is to establish minimum standards for materials and material assemblies and provide a reasonable level of exterior wildfire exposure protection for buildings in WUI Fire Areas. Protecting a building from wildfire takes a two pronged approach: removing flammable materials from around the building, and constructing the building of fire resistant material.

Local Regulations

Solvang Municipal Code. The City has adopted the Uniform Fire Code which contains specific development regulations for areas of high and severe fire hazard. Site plans for any development proposed in high hazard areas are subject to the review of the Solvang Emergency Services Coordinator and Fire Marshal during the City's site plan review process. Such plans must show that the site provides adequate emergency access, has adequate water supply and pressure to meet fire flow needs, and provides an adequate fuel break or buffer zone to prevent the spread of structural fires to wild land areas.

1.4.3 Fire Hazards Affecting the Solvang Area

Type and Location of Fires That May Affect Solvang

Structural fires in urban areas typically pose an immediate hazard to the affected structure's occupants and any nearby structures. Such fires can have a variety of ignition sources that include kitchen fires, the use of yard equipment, electrical problems and even arson. The type and scale of development within the City helps minimize the danger associated with structural fires. Residential development consists largely of one- and two-story single family dwellings on individual lots with front, rear and side yards that afford accessibility for fire protection. Commercial buildings in the Village area consist largely of two-story structures with access from the adjoining street and from the rear. The relatively compact size of the City affords quick response times for firefighting. As a result, structural fires are brought under control relatively quickly by the Santa Barbara County Fire Department.

Wildfire is an uncontrolled fire spreading through vegetative fuels and exposing or consuming structures. The hills surrounding the City support dense stands of chaparral, oak woodlands and grassland that are the primary fuel source for wildfires in the region. The low annual precipitation (about 15 inches per year), highly flammable vegetation and high velocity "Santa Ana" winds create ideal conditions for major wildfires.

The threat of a wildland fire affecting Solvang is high due to the presence of dense, flammable vegetative fuels on land surrounding the City adjacent to the City's wildland urban interface and especially in the hills surrounding the north and northwest portions of the City. The wildland urban interface is where structures and other human development meet or intermingle with wildland or vegetative fuels. The threat is particularly significant during dry summer months and when there are strong Santa Ana winds. The fire season extends approximately 5 to 6 months, from late spring through fall.

Fire Hazard Severity Zones

California Public Resources Code Sections 4201 - 4204 and California Government Code Sections 51175 89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), then define the application of various mitigation strategies to reduce risk associated with wildland fires. CAL FIRE completed public hearings for the adoption of FHSZ for SRAs in 2007, and adopted FHSZ maps for SRAs in November 2007 as shown in Figure 14.

The fire hazard severity is mapped for three categories: Moderate, High and Very High. As shown on Figure 14, the areas immediately surrounding the City's Plan Area are mapped as Moderate and High fire hazard severity. The steep hillsides to the south and west of the City possess dense oak woodland and chaparral vegetation and are mapped as Very High fire hazard severity areas.

Fire Protection

The City of Solvang is within the Santa Barbara County Fire District which provides fire protection services. Station No. 30 is located at 1644 Oak Street. The Fire Department has 9 full time equivalent personnel, with 3 firefighters on duty at all times. Station 30 apparatus include:

- Type 1 Brush Engine
- Type 3 Structure Engine
- Type 1 Reserve Engine
- A utility vehicle

Response times throughout the City are 3 to 5 minutes; there are no paramedic services provided.

Fire protection for the land between the City and the City of Buellton is provided by Santa Barbara County (Figure 15). Fire protection for other land surrounding the City is provided by Cal Fire and the US Forest Service. Mutual aid agreements are in place among CalFire, Santa Barbara County, and the US Forest Service.

Fire History

Fire history is an important component in understanding fire frequency, fire type, significant ignition sources, and vulnerable areas/communities. Figure 16 shows the major fires affecting the Solvang area from 1915 through 2009 (the most recent data). As seen in Figure 16, large-scale wildfires have occurred infrequently and have mostly occurred in the mountainous area south of the Santa Ynez River in the Santa Ynez Mountains.

Figure 14 -- Fire Hazard Severity Zones

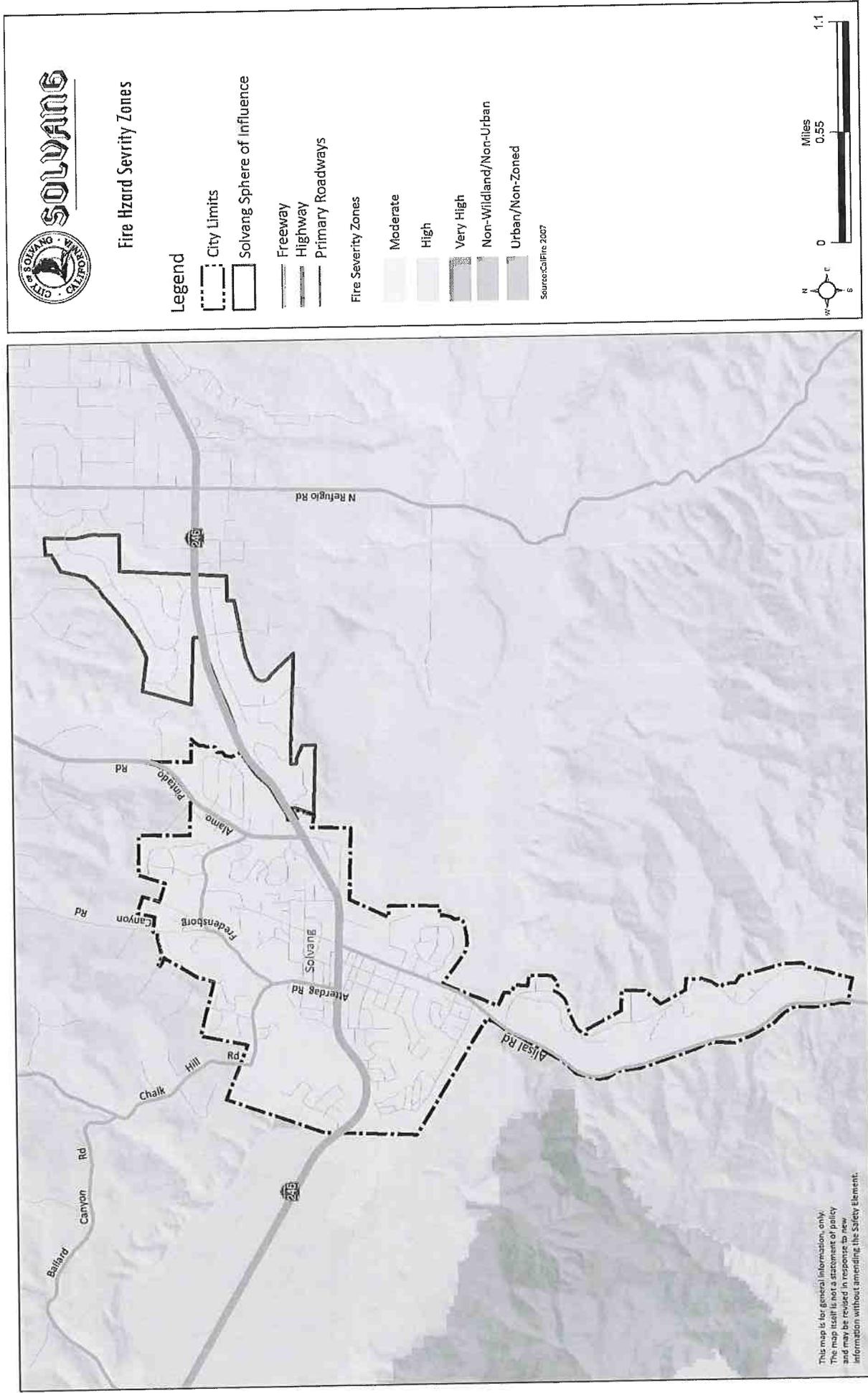


Figure 15 -- Fire Protection Responsibility Areas with Fire Stations

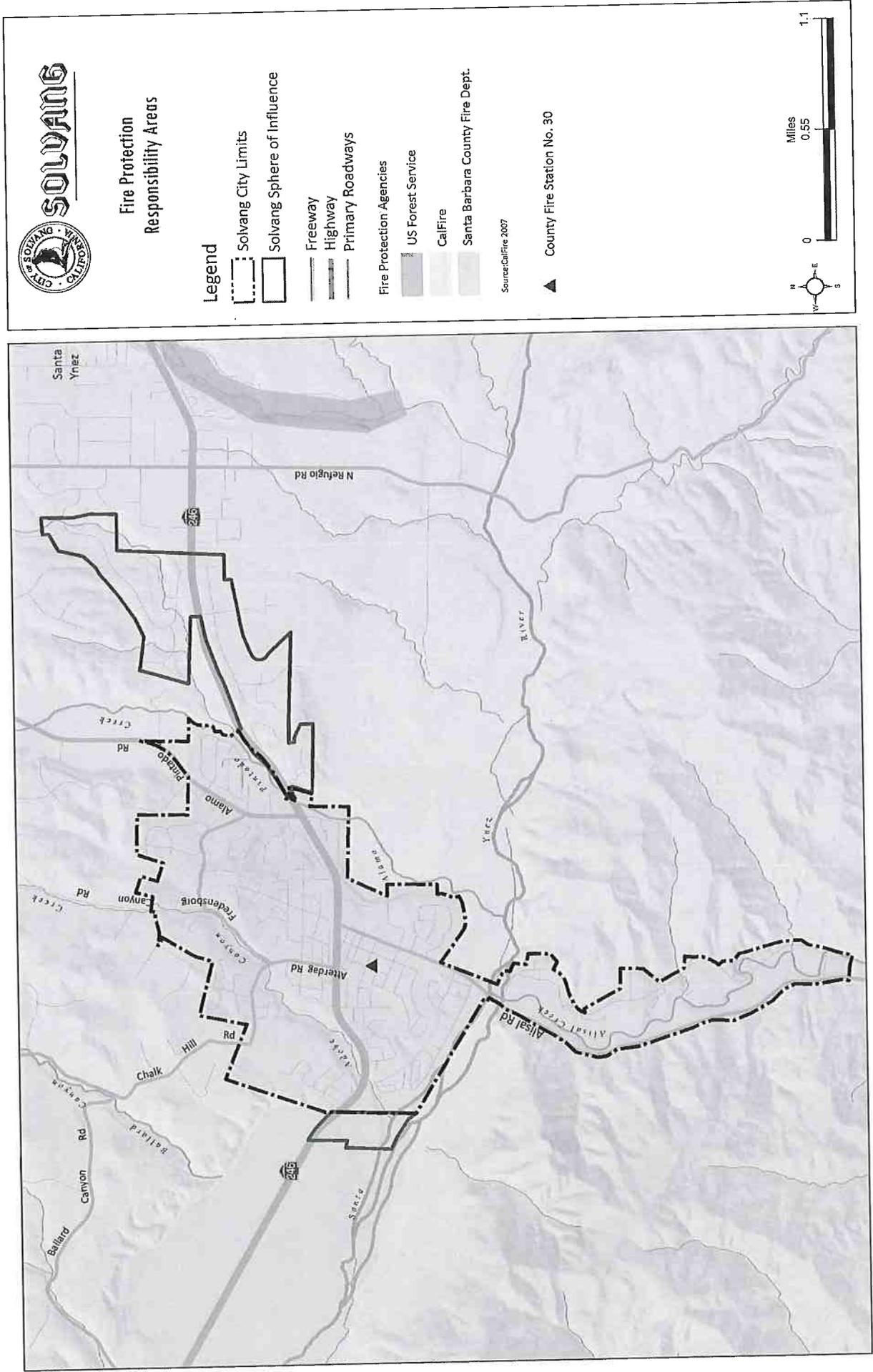
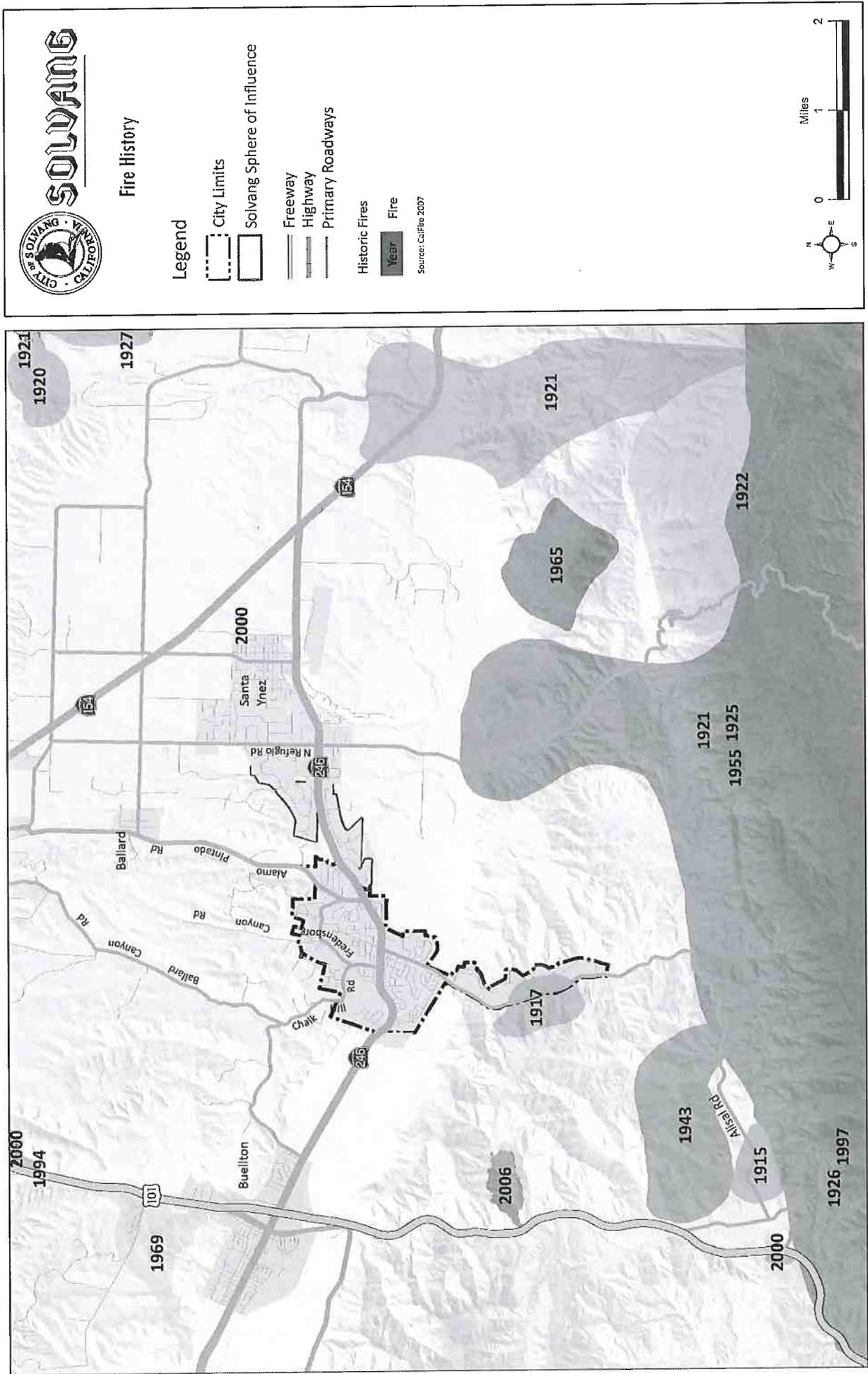


Figure 16 -- Fire History



**Table 7 -- Historic Fires in the Solvang Vicinity
(Through 2012)**

Year	Name	Responsible Firefighting Agency	Cause	Acres
1915		US Forest Service	Unknown	275.5
1916		US Forest Service	Miscellaneous	526.7
1917		US Forest Service	Unknown	312.0
1920		US Forest Service	Miscellaneous	318.6
1921		US Forest Service	Unknown	2,910.8
1921		US Forest Service	Unknown	127.9
1922		US Forest Service	Miscellaneous	3,784.8
1925	Refugio	US Forest Service	Miscellaneous	484.7
1926	Refugio	US Forest Service	Miscellaneous	194.3
1926	Los Cruces	Santa Barbara County	Arson	4,607.03
1934	San Onofre Cyn	US Forest Service	Miscellaneous	194.4
1943		US Forest Service	Unknown	1201.6
1950	Cobb Ranch	Santa Barbara County	Unknown	397.7
1955	Refugio	US Forest Service	Miscellaneous	79,428.7
1965	Gardner	Santa Barbara County	Unknown	720.3
1969	Buellton	Santa Barbara County	Unknown	539.7
1979	Zaca Station No. 2	Santa Barbara County	Unknown	243.0
1979	Zaca Station No. 1	Santa Barbara County	Unknown	580.3
1994	Jonata	Santa Barbara County	Unknown	77.2
1997	Homestead	US Forest Service	Miscellaneous	360.4
2000	Olive	Santa Barbara County	Unknown	10.4
2000	Nojoqui	Santa Barbara County	Unknown	27.3
2000	Jonata	Santa Barbara County	Unknown	193.1
2004	Gaviota	Santa Barbara County	Lightning	7,197.6
2006	Highway	Santa Barbara County	Unknown	151.8
2007	Zaca	Santa Barbara County	Human	240,207
2009	La Brea	US Forest Service	Campfire	91,622
2009	Jesuita	Santa Barbara County	Equipment	8,733
2011	Figuroa	US Forest Service	Equipment	698

Source: CalFire, 2014
http://frap.fire.ca.gov/data/frapgisdata-sw-fireperimeters_download.php

1.5 Toxic/Hazardous Materials

Some businesses in Solvang transport, store, or use toxic or hazardous chemicals posing potential safety hazards. The most prevalent hazardous materials in Solvang are above- and under-ground storage tanks containing hazardous materials such as gasoline and diesel fuel. Dry cleaning operations can also lead to soil and groundwater contamination by solvents, including perchloroethylene (PCE), tetrachloroethene (TCE), and chromium. The Central Coast Regional Water Quality Control Board (RWQCB) is currently the oversight agency for contaminated sites of this type in the City and its Plan Area. In addition, pesticide use on agricultural operations in the vicinity of Solvang can also be a source of toxic or hazardous materials that can affect water supplies.

The nearest Community Hazardous Waste Collection Center is located at the University of California at Santa Barbara (UCSB). Households in the cities of Goleta, Santa Barbara, and Solvang, as well as the unincorporated areas may dispose of household hazardous waste (HHW) on Saturdays from 9:00 a.m. to 3:00 p.m. and on Sundays from 11:00 a.m. to 3:00 p.m.

The State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by state and local agencies and developers to comply with the siting requirements prescribed by federal State and local regulations relating to hazardous materials sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal-EPA) to annually update the Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list. DTSC's Site Mitigation and Brownfields Reuse Program EnviroStor database provides DTSC's component of Cortese List data by identifying State Response and/or Federal Superfund and backlog sites listed under Health and Safety Code Section 25356. In addition, DTSC's Cortese List includes Certified with Operation and Maintenance sites.

In addition to EnviroStor, the CAL-SITES Abandoned Sites Information System (ASPIS) database, compiled by Cal-EPA, can also be used to identify and track potential hazardous waste sites. This database is regularly uploaded to the State's Geographic Environmental Information Management System (GEIMS) so that agencies and the general public can access information regarding a specific site. GEIMS, a data warehouse which tracks regulatory data regarding leaking underground fuel tanks (LUFTs), other contaminant release sites, water quality information, water use information, and infrastructure data, can be used to identify properties that are known or have had contaminant spills. GeoTracker, the interface to GEIMS, uses commercially available software to allow users to access data from GEIMS over the Internet.

A search of the Cortese database and the GEIMS conducted in August 2014 for sites within the City's Plan Area produced the following:

Table 8 - Hazardous Materials Sites Identified Within the City of Solvang

Site Name	Address	Facility Type	Status
Valley Cleaners	1604 Copenhagen Drive	Cleaners	Cleanup Completed
City of Solvang Sewage Pump	1400 Fjord Drive	Sewage Pump	Cleanup Completed
Buellflat Rock	1214 Mission Drive	LUST ¹	Cleanup Completed
Solvang Transit Mix	1130 Mission Drive	LUST	Cleanup Completed
City of Solvang	1664 Oak Street	LUST	Cleanup Completed
Parson's Pharmacy	1662 Copenhagen St.	LUST	Cleanup Completed
Lunde Chevron	1704 Mission Drive	LUST	Cleanup Completed
Veteran Memorial Building	1745 Mission Drive	LUST	Cleanup Completed
City of Solvang	Alisal Road	LUST	Cleanup Completed
Private Residence	--	LUST	Cleanup Completed
Jim's Service Center	2015 Mission Drive	LUST	Open/Remediation Under Way

Sources: Department of Toxic Substances Control Envirostor, August, 2014; CAL-SITES Abandoned Sites Information System, March 2010, and Environmental Data Resources, Inc., EDR Radius Map Report August 22, 2014.

Notes:

1. Leaking Underground Storage Tank. The California State Waterboard regulates Leaking Underground Fuel Tank cleanup sites. A LUFT site is a undergoing cleanup due to an unauthorized release from an UST system. An underground storage tank system (UST) is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances.

The National Priorities List (NPL) is maintained by the U.S. Environmental Protection Agency (EPA) and lists the most severe hazardous waste sites as identified by Superfund. Sites are put on the NPL after they have been scored using the Hazard Ranking System, as well as having been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money. The NPL is primarily an informational resource that identifies sites that may warrant cleanup. As of August 2014, there were no NPL sites within the City's Plan Area.

1.6 Aircraft Overflight

The Santa Ynez Airport is a general aviation airport located approximately 5 miles east of the City (Figure 17). There are no commercial air services using the Santa Ynez airport. In 1993, the Santa Barbara County Airport Land Use Commission (ALUC) adopted an Airport Land Use Plan (ALUP) that establishes safety zones around the airport to protect the public from potential noise and safety impacts associated with aircraft overflights (Figure 17). The ALUP also designates allowable and conditionally allowable land uses for the different safety zones. However, the safety zones are limited to an area two miles surrounding the airport and do not affect the City's Plan Area.

Figure 17 -- Santa Ynez Airport Land Use Plan Safety Zones

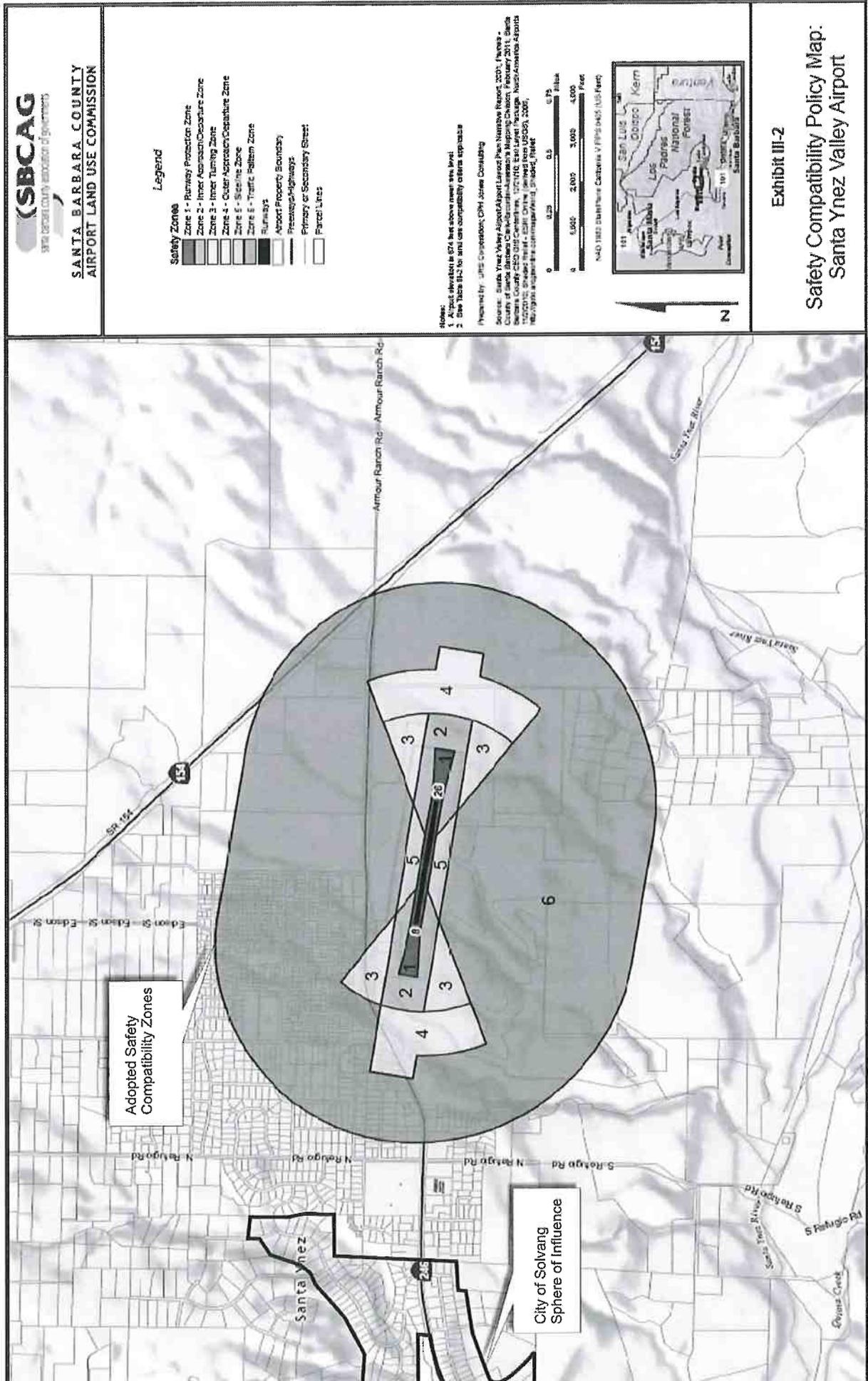


Figure 18 -- Airport Interest Area (Draft 2012)

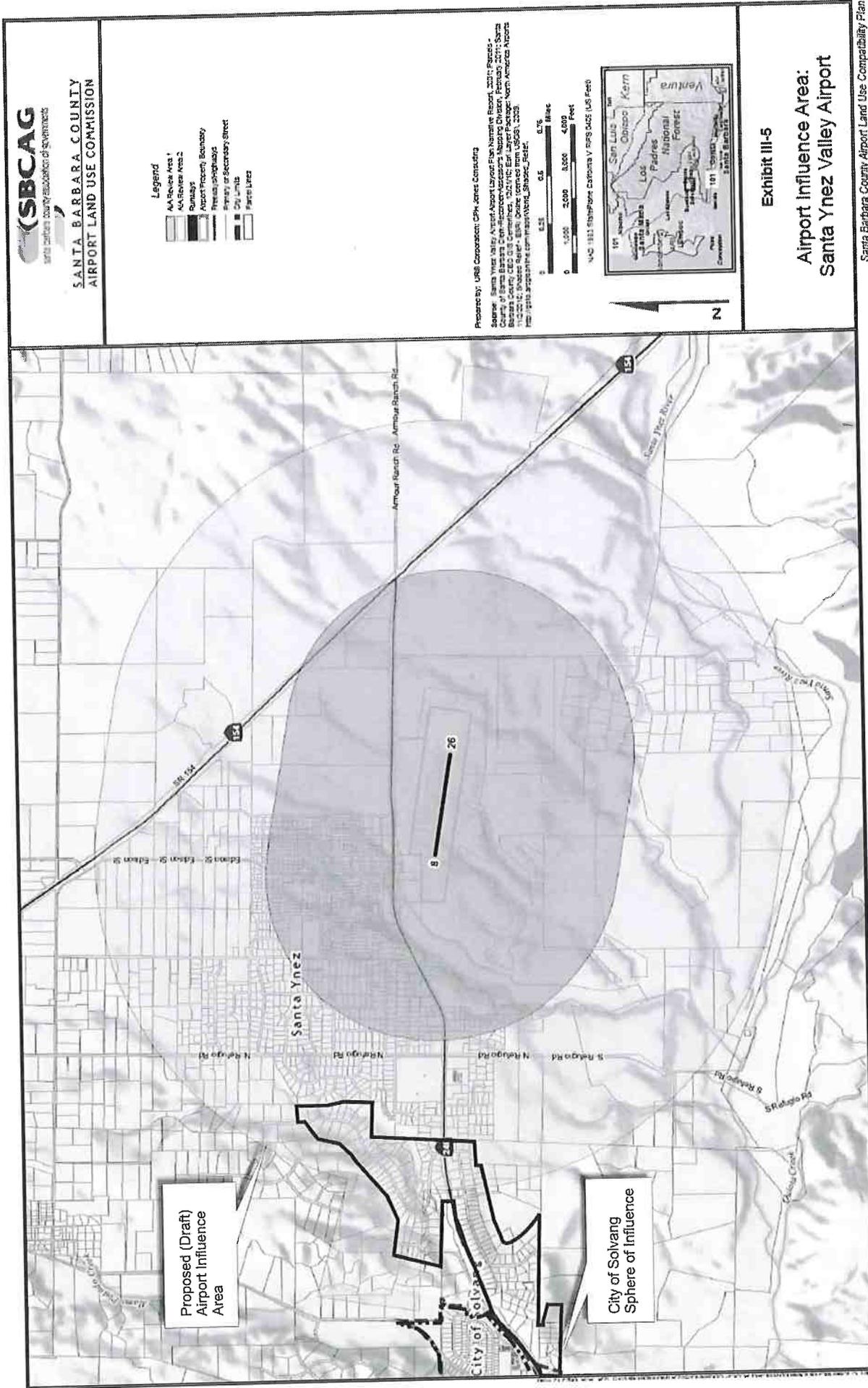


Exhibit III-5
Airport Influence Area:
Santa Ynez Valley Airport

Santa Barbara County Airport Land Use Compatibility Plan
 June 22, 2012

The ALUC is currently working on an update of the 1993 ALUP. The Draft Airport Land Use Compatibility Plan (2012) identifies an “airport influence area” (AIA) surrounding the airport (Figure 18). The AIA defines the jurisdiction of the ALUC and is the area where airport-related noise, safety, airspace protection, and overflight factors may significantly affect land use compatibility or necessitate restrictions on certain land uses as determined by the ALUC. Land use actions that affect property within the AIA will be subject to the compatibility policies and criteria in this Compatibility Plan. If a residential property is located within the AIA, a real estate disclosure must be provided as a condition of the sale or transfer of the property. A portion of the City’s sphere of influence outside the City limits lies within the draft AIA. If adopted, residential properties within this area would be subject to the disclosure requirements of the ALUP.

1.7 Law Enforcement and Crime

The City contracts with the Santa Barbara County Sheriff’s Department for law enforcement services. The City of Solvang Substation is located at 1745 Mission Drive and is staffed by 7.2 fulltime equivalent personnel. There is one patrol person on duty at all times of the day or night; response times throughout the City are estimated to be less than 3 minutes. Police units are currently dispatched to City emergencies through the Santa Barbara County dispatch which is provided on a contract basis. Upgraded repeater stations were installed in Buellton and Los Olivos in 2014 that will help improve emergency communications.

The Solvang Substation will respond to requests from other agencies outside the city limits when necessary. Other agencies who may request assistance include the California Highway Patrol, the State Department of Fish and Wildlife, and the County Parks Department.

1.7.1 Crime

Solvang experiences a relatively low level of crime, according to the Uniform Crime Report compiled by the police department and submitted to the California Department of Justice. These data are summarized in Table 9 and shown graphically in Figure 19.

	2009	2010	2011	2012	2013	Total	Average Per Year
Burglaries	29	30	27	18	23	127	25.4
Misdemeanor Theft	35	34	38	39	41	187	37.4
Felonies	36	32	34	36	42	180	36
Arrests	269	145	122	119	111	766	153.2

Source: City of Solvang Uniform Crime Reports, 2009 - 2013

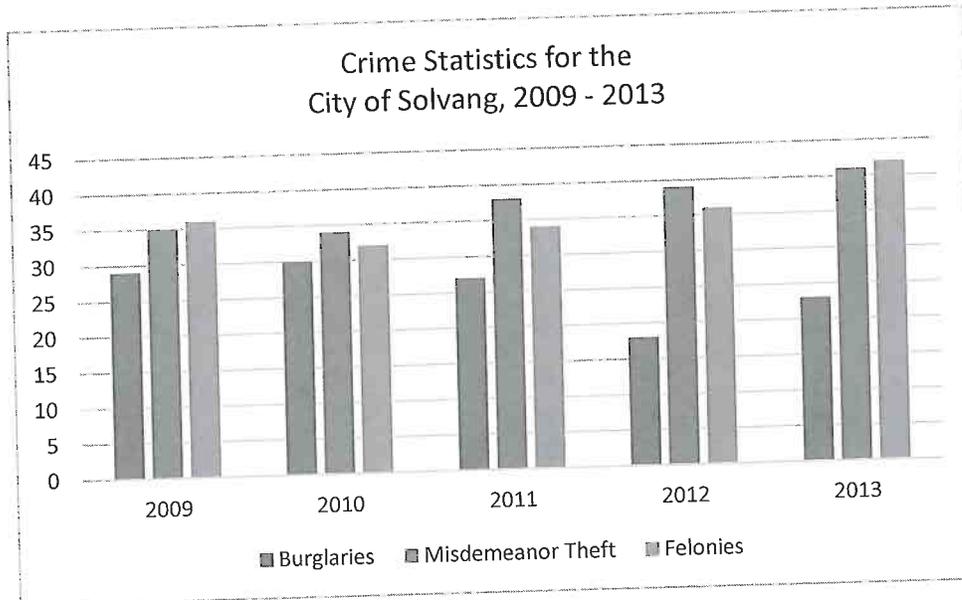


Figure 19 -- Crime Statistics for Solvang 2009 - 2013

Over the five year period from 2009 to 2013 a total of 180 felonies were reported, an average of 36 felonies per year or a rate of 6.8 felonies per 1,000 population per year.

1.7.2 Traffic Safety

Solvang experiences few traffic accidents on streets and intersections serving the City, based on data compiled by Safe Transportation Research and Education Center at the University of California, Berkeley. Between January, 2003 and December, 2011, there were 142 collisions reported, an average number of reported collisions of 18 per year, or about 1.5 per month. Mission Drive/State Route 246 carries the highest traffic volumes in the City. Accordingly, the majority of collisions have occurred on Mission Drive. Although low vehicle speeds generally reduce the potential for accidents, during the period of 2003 to 2011, collisions resulted in a total of two fatalities on State Route 246 in the Solvang vicinity. One occurred west of the City in 2012 and the other occurred within the City limits in 2005 west of Nykobing Drive.

Table 10 -- Reported Traffic Accidents In The City of Solvang 2003 - 2011		
Type Of Collision	Number	Percent
Head-On	9	6.3%
Sideswipe	13	9.2%
Rear End	64	45.1%
Broadside	12	8.5%
Hit Object	20	14.1%
Overturned	3	2.1%
Vehicle/Pedestrian	15	10.6%
Other	4	2.8%
Not Stated	2	1.4%

Source: Safe Transportation Research and Education Center at the University of California, Berkeley, August 2014

<http://tims.berkeley.edu/tools/query/summary.php#>

1.8 Public Health

1.8.1 Disease Vectors and Pesticides

A disease vector is any organism capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including mosquitoes, flies, fleas, cockroaches, mites, rats, or fungi. The accumulation of organic waste acts as an attractor for flies, fleas, cockroaches, and rodents and other mammals, which can be carriers of various human diseases. In addition, any depressed areas, ponds, or drainage channels provide areas for the breeding of mosquitoes, which can be carriers of the West Nile Virus, a potentially-fatal disease in humans.

West Nile Virus

West Nile virus is an arthropod-borne virus (arbovirus) most commonly spread by infected mosquitoes. West Nile virus can cause febrile illness, encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord). There are no medications to treat or vaccines to prevent WNV infection. Fortunately, most people infected with WNV will have no symptoms. About 1 in 5 people who are infected will develop a fever with other symptoms.

The Santa Barbara County West Nile Virus (WNV) Surveillance Project is a multi-agency collaboration with representatives from the Santa Barbara County Public Health Department, the Santa Barbara Coastal Vector Control District, and the California Department of Health Services (DHS). This collaborative will provide ongoing information updates to the community

regarding the status of the West Nile Virus in Santa Barbara County. Since 2005, a total of seven cases of West Nile Virus have been reported in humans. The control of mosquitos along with ongoing monitoring and public education are the most effective approaches to addressing the risk of West Nile Virus.

Valley Fever

Dry, low rainfall areas such as land within the Santa Ynez Valley may harbor the fungus that causes *coccidioidomycosis*, commonly known as Valley Fever. According to the Centers for Disease Control (CDC 2013), Valley Fever can infect the respiratory system and may, in rare instances, spread from the lungs to the rest of the body and cause more severe conditions such as meningitis or even death. Valley Fever cannot spread from person to person; in most people the infection will go away on its own, but for people who develop severe infections or chronic pneumonia, medical treatment is necessary. The spores³ that cause Valley Fever live in the soils of the southwestern United States in areas of low rainfall and may become airborne when the soil is disturbed by such things as farming and construction activities and wind. Infection rates are highest in California from June to November when soils are driest.

Cases of valley fever have been reported recently in the Santa Maria area, but have not been reported in the Santa Ynez Valley. Although the potential exists for the spores to be present, the absence of reported cases suggests a low hazard to Solvang residents.

Pesticides

Pesticides are also a major source of groundwater pollution that frequently contaminate drinking water and irrigation wells. Pesticide properties include both physical and chemical characteristics such as solubility, adsorption, volatility, and the potential for degradation. Pesticide chemicals that dissolve readily in water are highly soluble, thus making them available for transport with the water flow. Such pesticides have a tendency to leach from the soil into groundwater. However, many pesticides do not leach because they are adsorbed into soil particles or organic matter, even though they may have a relatively high solubility. Highly volatile chemicals are easily lost to the atmosphere and are less likely to leach into the groundwater, unless they are also highly soluble and collected in water systems. Degradation affects the potential for a pesticide to reach groundwater, and the persistence of the pesticide influences the potential for long-term contamination. The longer the compound lasts before it is broken down, the longer it is subject to the forces of leaching. However, many highly persistent pesticides (e.g., chlorinated hydrocarbons) have not been found in groundwater because of their low solubility and strong adsorption to soil particles. On the other hand, some pesticides of low persistence (e.g., aldicarb) have been found in groundwater.

Soil properties that affect pesticide movement include texture, permeability, and organic matter content. Management practices, or the methods used to apply pesticides, are another factor determining leaching potential. Injection or incorporation into the soil, as in the case of nematicides, makes the pesticide most readily available for leaching. Most of the pesticides that have been detected in groundwater have been incorporated into the soil rather than sprayed onto growing crops. It is important to remember that pesticide and groundwater relationships are site-specific, and even minor changes in the soil-crop-environment-pesticide relationship can change the potential for groundwater contamination.

³ A spore can be thought of as a cell that is dormant (asleep) but may come to life with the right conditions.

Pesticide use on lands surrounding the City poses a risk to the City's water supply and to its residents. Pesticide use is regulated by the Environmental Protection Agency and locally by the County Agriculture Commissioner. Compliance with federal and state regulations for the use, transport and storage of pesticides helps ensure a margin of safety for City residents. In addition, the City's water supply is tested daily to ensure compliance with federal and state safe drinking water standards.

1.9 Findings

- Solvang has adopted plans and policies to minimize the risk to people and property associated with hazards affecting the City, and to guide the effective management of resources in the event of an emergency.
- Solvang is located in a seismically active area and has about a 10% chance of experiencing a moderately strong earthquake over the next 30 years. All local unreinforced masonry buildings have been retrofitted to meet current seismic safety codes.
- Although the Santa Ynez fault passes through the City's Plan Area and is considered an "active" fault, there is no evidence of surface rupture during the past 11,000 years.
- Areas of the City along the creeks and near the Santa Ynez River may be subject to the effects of liquefaction during a seismic event.
- Certain soils within the City's Plan Area may be susceptible to erosion and slope instability. However, continued adherence to the provisions of the California Building Code will minimize the risk to people and property.
- The City is subject to the effects of flooding during a 100-year and a 500-year flood event. The City has adopted floodplain management regulations to protect people and property from the hazards associated with flooding.
- Solvang is located in an area where conditions are conducive to destructive wildfires. The City has established mutual aid agreements with regional fire protection agencies to help ensure the continued effect management of fire protection resources.
- The most common source of toxic or hazardous materials in the City is underground fuel storage tanks. Although several underground tanks in the City have experienced leaks over the years, they have all be remediated in accordance with the requirements of the Regional Water Quality Control Board.
- Valley fever has been reported in Santa Barbara County and could be present in soils surrounding the City. The likelihood of City residents contracting the disease from sources in the vicinity is considered low.
- The City's Plan Area does not include areas governed by the 1993 Airport Land Use Plan for the Santa Ynez Airport. However, a draft Airport Land Use Compatibility Plan currently under review by the Airport Land Use Commission identifies an Airport Influence Area that may affect a portion of the City's Plan Area if adopted.

- Solvang has a relatively low crime rate; police response times to all parts of the City are less than three minutes.

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Persons Consulted

Dwight Pepin, Fire Captain, Santa Barbara County Fire Department, August 4, 2014

Lt. Shawn O'Grady, Santa Barbara County Sheriff's Department, August 4, 2014

Conservation and Open Space

2.1 Introduction

Natural resources in and around Solvang consist of water, agricultural lands, soils, vegetation, wildlife, and air. These resources contribute to the City's economy, and help to provide a high quality of life for Solvang residents. This chapter inventories and assesses the area's natural resources and identifies potential constraints to urban development.

2.2 Water Resources

2.2.1. Important Terms Used In this Section

Acre-foot (AF). The volume of water required to cover one acre of land (43,560 square feet) to a depth of one foot. One acre-foot is equal to 325,851 gallons or 1,233 cubic meters. Historically, an acre-foot represents the amount of water typically used by one family during a year.

Aquifer. A geological formation or structure that stores and/or transmits water, such as wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people.

Beneficial use. Use of water either directly by people or for their overall benefit as legally defined and identified.

Discharge. A rate of water flow, typically expressed as a unit volume of water per unit of time (e.g., cubic feet per second (cfs)).

Groundwater. Water that occurs beneath the land surface, specifically within pore spaces of saturated soil, sediment, or rock formations. Groundwater does not include moisture held by capillary action in the upper, unsaturated areas of aquifers.

Groundwater basin. An aquifer or series of aquifers with defined lateral boundaries and bottom layer. In some cases the boundaries of successively deeper aquifers may differ and make it difficult to define the limits of the basin.

Groundwater recharge. The natural or intentional infiltration/percolation of surface water into the zone of saturation (i.e., into groundwater).

Non-point source. A pollution source that cannot be defined at a discrete location; a dispersed or spread out source area.

Runoff. Precipitation (rain or snowmelt) that is not used by plants, evaporated or infiltrated to soils, and is transported across land surfaces to streams or other surface water bodies. A volume of surface water (typically expressed in acre-feet).

Watershed. The land surface area from which water drains into a common downstream point.

2.2.2. Regulatory Setting

Federal Regulations

Federal Clean Water Act. The Federal Clean Water Act (CWA) is the primary Federal law that protects the quality of the nation's surface waters, including lakes, rivers, aquifers, and coastal areas. Although the CWA applies to groundwater, implementation is focused on the protection of surface water. The CWA is a 1977 amendment to the Federal Water Pollution Control Act of 1972 (United States Code, Title 33), which established the basic structure for regulating pollutant discharges to navigable waters of the United States. Under the CWA, EPA sets national standards and effluent limitations, but delegates significant responsibilities to the California SWRCB and its regional boards. The CWA is based on the concept that all discharges into the nation's waters are unlawful unless specifically authorized by permit. The CWA includes a permit system that provides two general types of pollution control limits:

- Effluent limits that are technology-based and limit the quantity of pollutants discharged from a point source such as a pipe, ditch, or tunnel into a navigable water body.
- Ambient water quality standards that limit the concentration of pollutants in navigable waters based on the beneficial uses to which particular waters are put.

The CWA contains several provisions protecting water quality, including Sections 303(c)(2)(B), 303(d), 305(b), 401, 402(p), and 404, and the Toxics Rule.

- Section 303(c)(2)(B) of the CWA requires states to adopt numeric criteria for priority pollutants as part of the states' water quality standards. In 1991 the SWRCB adopted the Inland Surface Waters Plan (ISWP) and the Enclosed Bays and Estuaries Plan (EBEP), in part, to comply with the CWA. California SWRCB amended the plans in 1993. In 1994 SWRCB rescinded the ISWP and EBEP in response to a court ruling invalidating the plans. In order to bring California into compliance with the CWA, SWRCB and EPA agreed to a two-phased approach. Phase I consisted of EPA promulgating numeric water quality criteria for priority pollutants for California in accordance with the CWA, and SWRCB adopting statewide measures to implement those criteria in a statewide policy. In Phase II SWRCB would consider the adoption of appropriate statewide water quality objectives for toxic pollutants. EPA published the California Toxics Rule (CTR 2000) in the Federal Register, adding Section 131.38 to Title 40 of the C.F.R. On May 22, 2000, the Office of Administrative Law approved, with modifications, the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Phase 1 of the ISWP and EBEP). The policy establishes implementation procedures for three categories of priority pollutant criteria or water quality objectives. These are: 1) criteria promulgated by EPA in the National Toxics Rule that apply in California; 2) criteria proposed by EPA in the California Toxics Rule; and 3) water quality objectives contained in RWQCB water quality control plans (basin plans).
- Section 303(d) of the CWA requires states to identify waters that are not expected to meet water quality standards after application of effluent limitations for point sources, develop a priority ranking and determine the total maximum daily load of specific pollutants that may be discharged into the water, and meet the water quality standards. States are required to establish Total Maximum Daily Loads (TMDLs) for these water

bodies that will lead to achieving the applicable water quality standards and to allocate TMDL among all contributing sources. Approved TMDLs are implemented through National Pollutant Discharge Elimination System (NPDES) permits, non-point source control programs, and other local and State requirements.

- Section 305(b) of the CWA requires states to perform a biennial assessment of the water quality of navigable waters within each state. The assessment is required to analyze the extent to which beneficial uses are supported. Therefore, the assessment provides an analysis of the extent to which elimination of pollution and protection of beneficial uses had been achieved. The assessment is also required to describe the nature and extent of non-point sources of pollution and provide recommendations for control programs including costs.
- Section 401 requires that Federally-authorized discharges into waters of the United States do not violate State water quality standards. Anyone applying for a Federal permit or license for an activity that may result in any discharge into waters of the United States must request State certification that the proposed activity will not violate State water quality standards. Within California, Section 401 is implemented by SWRCB and the RWQCBs.
- Section 402(p) of CWA requires a NPDES permit for storm water discharges from municipal separate storm sewer systems, industrial activities, construction activities, and designated dischargers that are considered significant contributors of pollutants to waters of the United States. The Phase I permitting program, which was initiated in 1990, generally addressed stormwater runoff from: 1) municipal separate storm sewer systems serving populations of 100,000 or greater, 2) construction activity disturbing five acres of land or greater, and 3) ten categories of industrial activity. The Phase II program regulates storm water discharges associated with small construction activity (i.e., sites disturbing between one and five acres of land), and small municipal separate storm sewer systems (i.e., serving populations less than 100,000). The NPDES program is discussed in more detail below under the CVRWQCB summary.
- Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Responsibility for administering and enforcing Section 404 is shared by the U.S. Army Corps of Engineers (USACE) and EPA. USACE administers the day-to-day program, including managing individual permit decisions and jurisdictional determinations; developing policy and guidance; and enforcing Section 404 provisions. On the other hand, EPA develops and interprets environmental criteria used in evaluating permit applications, identifies activities that are exempt from permitting, reviews individual permit applications, enforces Section 404 provisions, and has authority to veto USACE permit decisions.

State Regulations

Porter-Cologne Water Quality Control Act. SWRCB and the nine RWQCBs have State authority to regulate water quality under the Porter-Cologne Water Quality Control Act (Porter Cologne) and Sections 22560 through 22565 of Title 27 of the California Code of Regulations (CCR), in addition to the authority to regulate under the Clean Water Act. There are ten SWRCB water quality control policies and three SWRCB water quality control plans to which RWQCB actions must conform. The Basin Plan for the Central Coast Region (CCWQCB 1994)

incorporates by reference SWRCB water quality control plans and policies to protect beneficial uses of state water resources. The Basin Plan states the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. Regional plan objectives and discharge requirements are implemented through the issuance of waste discharge requirements (WDRs) or NPDES permits.

Department of Water Resources. The mission of the Department of Water Resources (DWR) is to manage the water resources of California in cooperation with other agencies, to benefit the state's people, and to protect, restore, and enhance the natural and human environment. DWR conducts numerous programs related to flood safety, water planning, environmental concerns such as climate change, and water supply. DWR coordinates closely with the Regional Water Quality Control Boards on water quality issues.

Groundwater Management Act (Assembly Bill 3030 / Senate Bill 1938). The Groundwater Management Act (first defined in 1992 in Assembly Bill 3030 and amended in 2002 by Senate Bill 1938 and again in 2008) was ratified in California Water Code Sections 10750-10756. This act provides a systematic procedure for a water supply or management agency to develop a groundwater management plan. One hundred forty-nine agencies have adopted groundwater management plans in accordance with AB 3030. AB 3030 allows certain defined existing local agencies to develop a groundwater management plan for groundwater basins.

Sustainable Groundwater Management Act (AB 1739, SB 1168, SB 1319). On September 16, 2014, the Governor signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource. The act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. The act provides substantial time – 20 years – for GSAs to implement plans and achieve long-term groundwater sustainability. The SGMA protects existing surface water and groundwater rights and does not impact current drought response measures.

Groundwater Elevation Monitoring Program Act (Senate Bill 7x6). Senate Bill 7x6 established the Groundwater Monitoring Program Act ratified in the California Water Code Sections 10920 and 12924. This act established a monitoring program for all DWR-defined groundwater basins in California. A local public agency or organization can propose in 2010 to be designated by DWR as the groundwater monitoring entity. The entities that are eligible are: a watermaster or water management engineer appointed by a court, groundwater management agency, water replenishment district, local agency that is managing all or part of a groundwater basin or subbasin, county government, or voluntary cooperative groundwater monitoring association. If none of these are available, DWR would perform the monitoring functions. The program requires monitoring and reporting of groundwater elevations in all or part of a basin or subbasin. DWR is required to work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information is reported. The bill authorizes DWR to make recommendations for improving an existing monitoring program, and to require additional monitoring wells under certain circumstances. Failure to implement a groundwater monitoring program makes the county and agency responsible for the monitoring ineligible for a State water grant or loan.

Central Coast Regional Water Quality Control Board. The primary function of CCRWQCB is to protect the quality of the waters within the region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the SWRCB are contained in the Porter-Cologne Water Quality Control Act. CCRWQCB is responsible for enforcing all water quality standards for permitted or other discharges. As a part of enforcement, the RWQCB may require monitoring from a regulated facility to ensure no adverse impact to groundwater or surface water.

Local Regulations

City of Solvang Water System Master Plan. In February 2014, the City adopted the April 2011 Water System Master Plan Update. The purpose of the update was to:

- evaluate present and future water supply and demand conditions;
- analyze and identify water system supply and distribution deficiencies; and
- develop recommendations and a capital improvement program to address deficiencies.

The Master Plan provides an overview of water supplies available to the City and recommends priorities for different strategies for meeting future demand through buildout of the City's General Plan.

2.2.3. Groundwater Resources

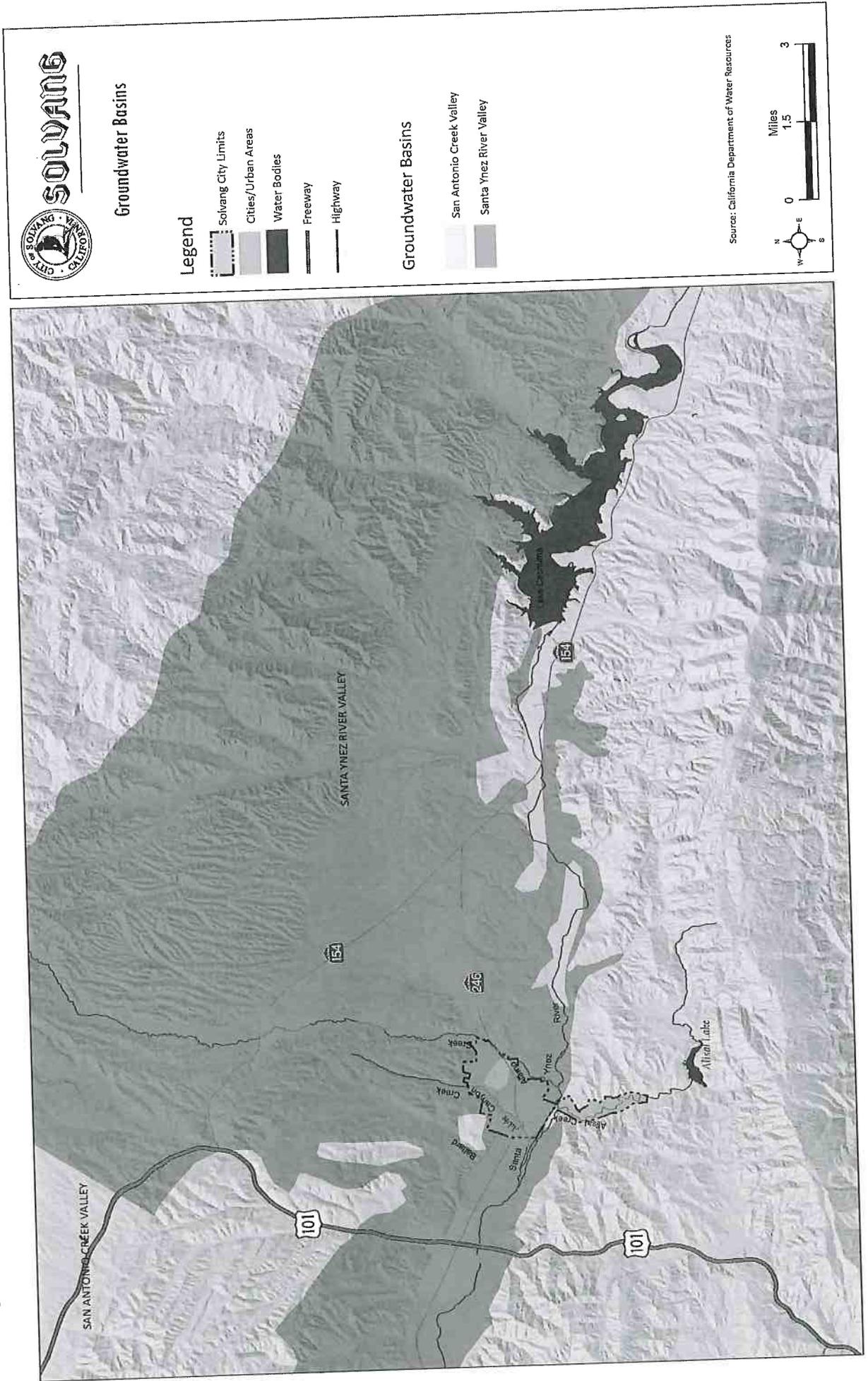
The City of Solvang is located within the Santa Ynez River Valley Groundwater Basin (Figure 20). The total storage capacity of the Basin is estimated at 2,700,000 af (Bader 1969; DWR 1975a). The available water in storage in the eastern portion of the basin is estimated at 900,000 af (SBCPDC 1994, SBCWA 1999). Recharge is derived from infiltration of precipitation, stream flows, and percolation of irrigation water and wastewater effluent.

The Santa Ynez River Water Conservation District ID#1 (SYRWCD ID#1) serves water to portions of the Santa Ynez Valley and Los Olivos in a portion of the Santa Ynez Uplands Groundwater Basin. SYRWCD ID#1 has studied the basin extensively and employs a conjunctive use strategy utilizing all of its supplies (State Water, Cachuma Project Water, Groundwater from the Santa Ynez Uplands and Groundwater from the Santa Ynez River Alluvial Basin) to provide reliability in a wide range of hydrologic conditions.

Groundwater pumping meets about 85% of the water demand within the basin area. In addition to groundwater, water is imported into the basin from the Cachuma Project, the State Water Project and the Santa Ynez River Alluvial Basin. Agriculture accounts for about 75% of the water demand within the basin; the remaining demand is mostly from urban consumers. The basin is pumped by the City of Solvang, the SYRWCD ID#1, which serves the Santa Ynez and Los Olivos areas, and by private agricultural and domestic users. SYRWCD ID#1 and the City of Solvang also pump from the Santa Ynez River Alluvial Basin. The SYRWCD ID#1 holds a state water allocation of 2000 Acre-Feet of which 1500 AF are contractually committed for use by the City of Solvang.

Water quality within the basin is generally adequate for most agricultural and domestic purposes.

Figure 20 -- Santa Ynez River Groundwater Basin



2.2.4. City of Solvang Water Supplies

The City of Solvang currently has multiple sources of water supply including City wells (both upland wells and river wells), interconnects with ID-1, and a connection with the State Water Project. These sources are described in greater detail below.

River Wells 3 & 7A

The City of Solvang currently has two active river wells that supply domestic water to its customers. Wells 3 and 7A are located on the banks of the Santa Ynez River. These wells are both at risk of being under the influence of the Santa Ynez River because the surface water migrates across the channel. If surface water is within 150 feet of a well, the water from that well must be treated. The level of treatment increases to full surface water requirements if the surface water is within 100 feet of the well. At present Solvang does not have the ability to provide that level of treatment so a well must be shut down when the river flows close to it. Well 3 is located just west of Alisal Road and produces approximately 340 gpm. Water from this well is treated on-site with chloramines and discharged into 200 feet of 36 inch pipe. The large pipe serves as a chlorine contact chamber, to achieve the required contact time before water is discharged to the distribution system.

Well 7A is located approximately 500 feet east of Well 3. Well 7A produces approximately 110 gpm. Chlorine contact time for this well is achieved in a 16-in diameter pipe before it is discharged into the distribution system. The City's existing Permit No. 15878 to appropriate water from an area (or 'reach') along the Santa Ynez River allows Solvang to divert up to 5 cubic feet per second and up to 3,600 acre feet per year from the underflow of the River. The City is currently (2014) acquiring easements to install additional wells along the River. Once the easements have been acquired, the City intends to submit a Petition to the State Water Resources Control Board (SWRCB) for a permit modification that would accomplish the following:

- Expand the 'reach' of the City's diversion to avoid impacts to existing wells in the area.
- Allow the installation of new wells along this expanded reach.
- Extend the time period for the "prove up" of the City's full requested water use.
- Reduce the quantity of water diverted from the River from 3,600 AFY to 1,980 AFY.

If approved by the SWRCB, the City will finish the other components of this project and work toward "proving up" the Permit to obtain a license to extract 1980 AF of water annually from the Santa Ynez River. Environmental review for the project has been completed. However, additional studies must be completed in accordance with the permitting requirements of the relevant regulatory agencies.

The City has lost a number of wells in or near the River as a result of floods. Those wells must be replaced and water pumped from the River underflow into the City's water system to prove that the City can, and has, put the requested amount of river water to beneficial use. The City needs to establish how much time will be needed to prove-up the intended use of river water. Once the use is established, the City can obtain a license to annually divert the proven amount. A license to divert is essentially an appropriative water right granted by the State Water Resources Control Board. However, even a license is subject to conditions and restrictions on pumping due to hydrologic conditions and to address public trust and environmental issues.

Solvang Upland Well 4

Well 4 is located downtown near the Solvang City Hall. Well 4 is capable of producing 320 gpm. The well water is disinfected with chloramines and discharged directly to the distribution system.

Solvang Upland Wells 21 & 22 (Inactive)

Well 21 is located outside the City of Solvang limits atop a hill just east of Chalk Hill Road, on the site of Reservoir 2. This well has a capacity of approximately 110 gpm. It was inactive due to its historic low production and undesirable levels of iron (Fe), manganese (Mn) and hydrogen sulfide (H₂S). However, due to severe drought conditions, the well was placed back in service in March 2014. The water from this well is blended in Reservoir 2 and then discharged to the distribution system. Well 22 is located in the Creekside subdivision on the east side of town and was never used as a producing well due to periodic high levels of H₂S, iron, and manganese experienced during well development. Wellhead treatment for Well22 is very costly, therefore the City is pursuing other well options for increasing water supply at this time. Wellhead treatment for Well 22 may be considered in the future.

SYRWCD - Improvement District No. 1 Interconnects

This local improvement district sells water to the City of Solvang upon demand. Water from ID-1 is delivered into the City distribution system at two metered interconnect locations. Interconnect #2 is located in Zone 2 near the intersection of Coyote Creek Road and Alamo Pintado Road. Interconnect #1 is located in Zone 1 on Old Mill Road. Each of these interconnects has a maximum delivery capacity of approximately 1,200 gpm. Water supplied to the City of Solvang from this source is purchased from ID-1 at an on-demand rate. The cost of this water is much higher than the City's other water supply sources and as such is only used as a backup source of water.

The City has become less dependent on water from ID-1 during years that State Water is available. In recent years Solvang has primarily purchased ID-1 water during the annual November maintenance shutdown of the State Water Project (SWP).

State Water Project Turnout

The City of Solvang has entitlement (through contract with ID-1) to 1,500 AFY of water from the State Water Project. This maximum annual water supply is equal to an average flow rate of 927 gpm. This water source depends on the snow pack of the northern Sierra and its delivery is subject to environmental restrictions in the Sacramento to San Joaquin River Delta. Based on the 5% allocation of State water in 2014, the possibility of 0% allocation in any given year does exist, depending on the availability of runoff to the SWP and environmentally related pumping restrictions in the Delta. Although the official estimate is that the SWP have a long term average reliability of 59%, the City is conservatively planning on the availability of this source of water to be no more than about 40% on average. Despite low reliability, SWP water is significantly less expensive than water from ID-1. For practical planning purposes Solvang is assuming that its deliveries from the SWP will average 40% of its 1,500 AF annual SWP entitlement .

When new River Wells are in place and local rainfall is above average within the Santa Ynez River watershed, the City may not need its entire SWP allocation. Under these conditions, the City may want to store surplus water in San Luis Reservoir for use during future drought years,

or pursue water banking options. Table 11 presents a summary of current supply and anticipated long-term average supply for the City of Solvang:

Table 11 -- Current (2010) and Anticipated Future Water Supplies By Source		
Sources	Annual Production in 2010 ¹ (Acre Feet)	Anticipated Long-term Average Production (Acre-Feet Per Year)
Local Sources		
Santa Ynez River Wells	174	1,200
Central No. 4	136	100
Upland Wells	0	Unknown
Sub-Total:	310	1,300
External Sources		
Improvement District No. 1 ²	79	80
State Water Project	1,006	600
Total Supply From All Sources:	1,395	1,980
Source: City of Solvang Water System Master Plan Update, April 2011		
Notes:		
<ol style="list-style-type: none"> 1. Data from 2010 are presented because they are more representative of long-term production than data collected from 2011-2014 which reflects a period of drought. 2. Higher amounts could be obtained from this source. However, use of this source is minimized at this time due to high cost. 		

2.2.5. Water Conservation

For several years now the City of Solvang has actively promoted water conservation. Current water conservation Best Management Practices (BMPs) being implemented include: metering of all water deliveries, promotion of native and drought tolerant landscaping, an ongoing public information campaign through newspaper adds, City vehicle advertisements and mailers to businesses and homeowners, and conservation pricing (high water rates). These measures have been very successful as can be seen by the fact that the average per capita water use has dropped in recent years. Although not subject to the requirements of AB797 and SB7x7 (Urban Water Management Planning), the City of Solvang intends to continue to promote water conservation and make efforts to achieve an additional 20% conservation by year 2020.

In addition to continuing current BMPs, the City of Solvang intends to promote and implement the following additional BMPs: school education, and enhanced conservation pricing (tiered rate structure).

2.2.6. Water Storage

The City currently has a total of 1.24 million gallons of gross water storage. Table 12 shows the recommended storage capacity for the City for operational demand, fire protection, and emergencies based on generally accepted standards. The present storage volume in the Solvang water system of approximately 1.2 million gallons is inadequate by approximately 300,000 gallons. This is consistent with the experience of City staff regarding current difficulties in meeting peak hour demands in the summer on peak tourist weekends.

Storage Component	Recommended Volume (Gallons)
Operational Storage	450,000
Fire Protection ^{1,2}	600,000
Emergency	450,000
Total:	1,500,000

Source: City of Solvang Water System Master Plan Update, April 2011

Notes:

1. Fire protection is based on a 4-hr demand at 2,500 gpm.
2. Fire protection storage for each pressure zone may also require pumps and valves to move water between zones.

2.2.7. Future Demand

The City's future demand for water is estimated by adding current water demand to the water demand associated with the remaining development capacity of the City's general plan (buildout). According to the Solvang General Plan, the number of existing dwelling units at the time of General Plan adoption was approximately 2,452 units. These existing dwelling units plus the approximately 497 additional units at buildout total 2,949 units. The number of existing dwelling units in the City as of January 2011 was approximately 2,485 units. The difference between the buildout total of 2,949 units and the 2011 existing units of 2,485 was 464 future units. Per the California Department of Finance housing estimates for January 1, 2010 (Table E-5), the estimated persons per household (unit) was 2.353. Using these numbers for planning purposes, and an average water demand of approximated at 236 gallons per capita per day, an estimated additional 289 AFY will be required at buildout. The historic long term average demand for Solvang is 1,691 AFY. Therefore, the projected future water demand at buildout is 1,980 AFY. Table 13 presents current and historic long-term average production (demand), as well as projected annual demand at buildout.

Table 13 -- Current and Future Water Demand	
Component	Annual Water Demand (Acre-Feet Per Year)
Current (2010) Production	1,395
Long-Term Average Production	1,691
Demand From Additional Development	289
Total Demand At Buildout	1,980
Source: City of Solvang Water System Master Plan Update, April 2011	

2.2.8. Options for Additional Water Supply

The City's Water Supply Master Plan identifies the following options for meeting future water demand through buildout of the City's General Plan.

Priority 1 - Santa Ynez River Wells

This water source appears to be more reliable during droughts than the State Water Project. Reliance on this water source also commits the City to water treatment and the installation of a filtration plant.

In order to retain this source of water for any use in the future, the City must soon add new wells and demonstrate a continued reliance on this water source for beneficial use. Failure to do so will risk loss of the SWRCB permit for any such future use. The present permit allows the City to withdraw and use as much as 5 cfs (approximately 3.22 mgd). The City presently has capacity to withdraw only 450 gpm (340+110). This is equivalent to approximately 1.00 cfs or 0.65 mgd. Several additional wells must be installed to allow full beneficial use of this source. Installation and use of additional wells is necessary to avoid reduction or loss of the supply altogether.

The full 5 cfs capability of the River Wells might not be available every day due to hydrologic or environmental limitations that may constrain diversion from the Santa Ynez River under certain conditions. These potential reductions combined with potential reductions in the allocation of SWP could occasionally jeopardize the City's ability to satisfy the projected maximum day demand at Buildout. Therefore, it is recommended that the City proceed with efforts to assure a full 5 cfs (maximum-day) diversion capability from the river. Although that total diversion capability will only be needed on the high demand days each year.

Priority 2 - State Water Project Supply

The City has committed to the capital costs of providing this water source to City customers. The necessary connections have been installed and the overall water quality of this source is good. Although drought reliability of this source is less than for the Santa Ynez River Wells, the predominance of urban users of this water throughout the State indicate a high political ability to maintain the supply at some reduced level even during sequential dry years.

Priority 3 – Solvang Upland Wells

The water produced from Well 4 is relatively high in dissolved minerals, but in compliance with California Department of Public Health (DPH) regulations. Although the well continues to produce reliably, it is relatively old. Water from Well 4 can be provided without further treatment, but is pumped from a greater depth than the Santa Ynez River Wells. Currently the delivery cost of this water is similar to the Santa Ynez River Wells. However, if treatment is implemented for the River Wells the delivery cost of water from the river wells will be significantly greater than Well 4 water costs.

New Upland Wells are being drilled and are expected to be in service by August 2015 with a combined capacity of approximately 300 gallons per minute. A future project to add wellhead treatment for Wells 22 & 23 will be recommended for City Council approval in the City's 10-year Capital Improvement Program (CIP) to be updated in the summer of 2015. Well 23 is currently (January 2015) being drilled.

Priority 4 - Improvement District No. 1 Interconnects

Due to the high cost of this supply source, the two ID-1 connections are now used as a last resort, when other supplies are inadequate to maintain the volume of supply needed. This philosophy should be continued unless a reduced wholesale water rate can be negotiated with ID-1. The water available from this source is of similar quality and reliability as the City's own Santa Ynez River Wells. Even with treatment, water from the City's wells will cost substantially less than the current ID-1 rates.

2.2.9. Adequacy of Future Supply

An evaluation of the above supply and demand issues suggests that the City has a dependable supply of water adequate for buildout of the City's general plan. The City's primary sources of water supply include the River Wells and the State Water Project. The availability of alternate sources, such as the SYRWCD-ID No.1 connections and Well 4, provides assurance that the City will continue to serve its customers with safe and adequate water during highly unusual climate events such as prolonged drought. The added cost of maintaining these redundant water supply sources appears to be moderate and well advised.

2.3 Open Space and Scenic Resources

2.3.1. Important Terms Used In this Section

California Scenic Highway Program. The California Scenic Highway Program was created by the State Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways.

Conservation Easement. A legal agreement between a land owner and another party that limits uses of the land in order to protect its biological and other resource value.

Official State Scenic Highway. A scenic highway officially designated by the State Scenic Highway Advisory Committee after application from a local jurisdiction, and only when the highway is identified on State Scenic Highway Master Plans.

Open Space Land. Open space land is any parcel, area, or waterway that is essentially unimproved and devoted to an open space use. Under Section 65560 of the California Government Code, open space land is broadly defined as land designated for the preservation of natural resources (e.g., lakeshore and watershed lands); managed production of resources (e.g., lands for agriculture, pasture, forestry, recharge of groundwater basins); outdoor recreation (e.g., parks, scenic highway corridors, areas with outstanding scenic, historic, and cultural values); or public health and safety (e.g., floodplains, unstable soil areas).

Recreational Area. Any public or private space set aside or primarily oriented to recreational use. This includes both parks and community centers.

Rural Designated Scenic Highway. A route outside urban boundaries that traverses a visual corridor within which natural scenic resources and aesthetic values will be protected and enhanced.

Scenic Corridor. The visible land area outside of a transportation corridor (road) right-of-way and generally described as the "view from the road." A Scenic Corridor must be defined adjacent to all Scenic Roads and Highways.

Urban. The term urban is used to describe land uses common to a city or unincorporated community. Urban land uses include residential, commercial, industrial, and related institutional uses.

2.3.2. Regulatory Setting

State Regulations

Sections 65560 – 65568, Government Code: Open Space Lands. This part of the State Government Code defines open space and requires every city and county to prepare open space plans as a required element of their General Plan. Building permits, subdivision approvals, and zoning ordinance approvals must be consistent with the local open space plan.

Section 5076, Public Resources Code: California Trails Act. This law requires every city and county to consider trail oriented recreational uses and consider such demands in developing specific open space programs in their General Plan. Every city, county, and district must also consider the feasibility of integrating trail routes with appropriate segments of the State trail system.

Streets and Highways Code, Section 260, et. seq. A California highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view. When a city or county nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway, defined by the motorist's line of vision (a reasonable boundary is selected when the view extends to a distant horizon). The city or county must also adopt ordinances to preserve the scenic quality of the corridor, including: 1) regulation of land use and density of development; 2) detailed land and site planning; 3) control of outdoor advertising (including a ban on billboards); 4) careful attention to and control of earthmoving and landscaping; and 5) careful attention to design and appearance of structures and equipment.

Local Regulations

City of Solvang Community Design Element. The Community Design Element is aimed at preserving and enhancing Solvang's unique character by setting forth goals, policies and objectives that articulate the City's expectations for the qualities desired in new development.

City of Solvang Parks and Recreation Element. The Parks and Recreation Element is an optional element of the City's general plan that sets forth goals, policies and recommended actions to guide decision making relative to the City's parks and recreation programs. The Element provides an inventory of City parkland and open space resources and includes policies and standards for park acquisition and development.

2.3.3. Open Space Resources

The Government Code defines four classes of open space:

Open Space for the Preservation of Natural Resources. Open space is important for the protection of sensitive biological resources. For example, wetlands and habitat for special-status plant and wildlife species are often designated as open space to preclude the conversion of this land to a use that is incompatible with the perpetuation of these resources. In Solvang, sensitive wetlands vegetation can be found along the Santa Ynez River, Adobe Canyon Creek, Alamo Pintado Creek and Alisal Creek (Figure 26).

Open space Used For The Managed Production of Resources. Open space lands used for the managed production of resources is important to maintain adequate supplies of food and fiber. Agricultural land and land used for the extraction of mineral resources are often designated open space to ensure their continued productivity as well as to offer visual relief. Agricultural lands in the Solvang area located on the alluvial plains along the Santa Ynez River will most likely remain as open space due to access constraints, slope and potential flooding.

Open Space for Outdoor Recreation. Open space used for recreation is important to meet the community's recreational and cultural needs. Parkland, hiking and biking trails, equestrian trails and greenbelts which link different recreation areas are examples of recreational open space.

As described in the Parks and Recreation Element, several areas within Solvang have been designated for open space/recreation uses (Figure 21). Open space in the Los Padres National Forest is another important open space resource available to Solvang Residents.

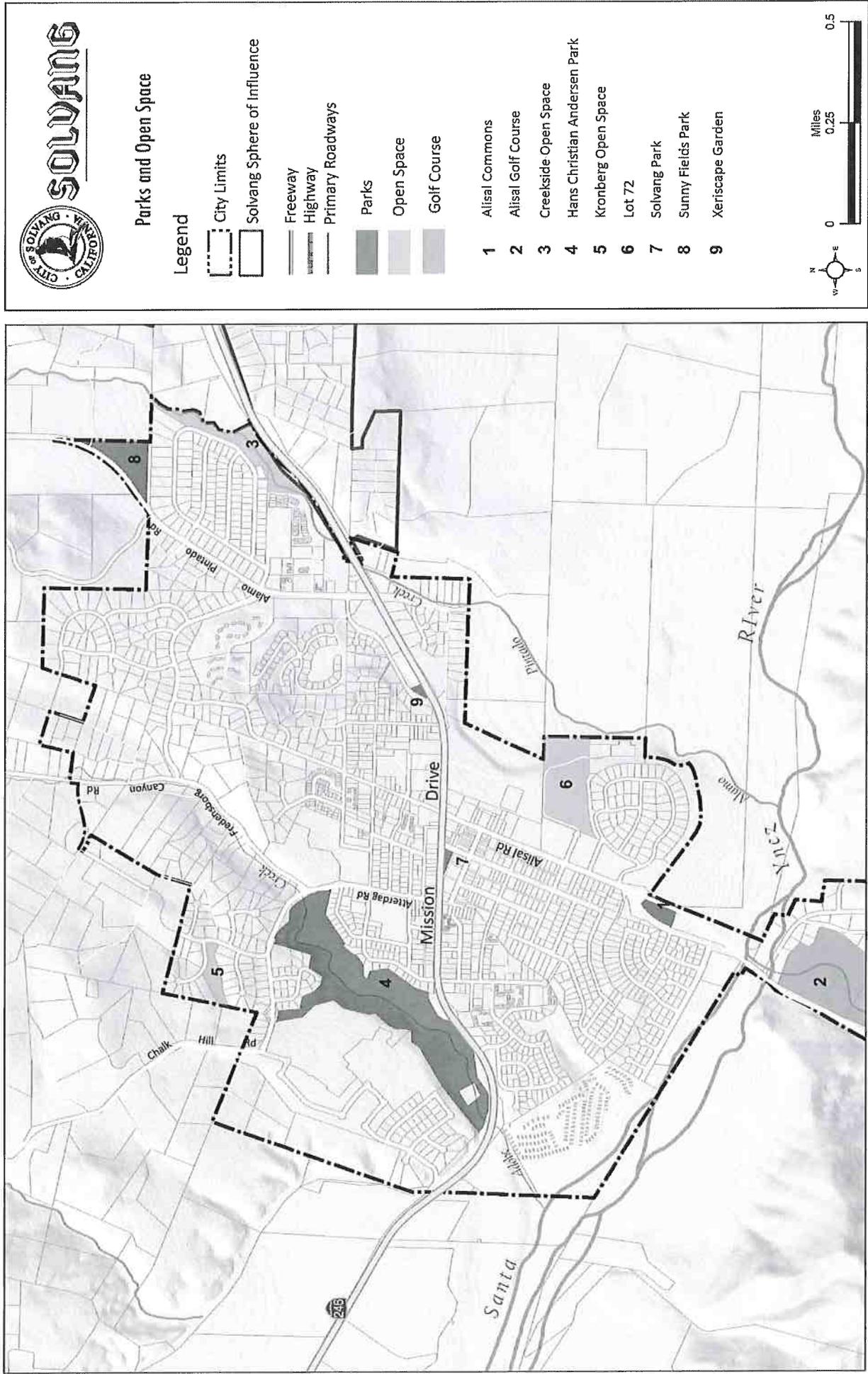
Open Space for Public Health and Safety. Land that may be subject to potential hazards such as earthquake faults, flooding, wildfire, and slope stability is often designated as open space to protect life and property. These areas may also include watersheds that are important for the protection of water quality.

In addition, open space can be further classified on the basis of its permanence. Permanent open space includes land developed with parks, golf courses, and school playgrounds. Such lands include Hans Christian Andersen Park, Solvang Park and the Alisal Golf Course. Other types of permanent open space in the Solvang area include the Santa Ynez River and lands where the development rights have been permanently extinguished by way of a conservation or open space easement. Such conservation lands have been preserved in Fredensborg Canyon, the north edge of the Alisal Green and Meadow area and the canyon in the Nyborg area (Figure 21).

Interim open space areas are typically private properties that are currently vacant or underutilized. In Solvang, the vacant land located south of Mission Santa Ines between Alamo Pintado Creek and Alisal Road is an example of interim open space since it is designated for future residential development. The Skytt Mesa is also in this category since a portion of it is designated for future residential and commercial use. The areas outside the city are designated for semi urban uses with one, five and ten-acre minimum parcel sizes.

Table 14 - Open Space Resources		
Name	Area (Acres)	Description
Public Parks		
Alisal Commons	2.0	A passive use park that encompasses 2-acres of gently sloping land adjacent to Alisal Road overlooking the Santa Ynez River and Alisal Ranch Property. A pedestrian path runs from Alisal Road to Glen Way. The park is landscaped with natural plants.
Hans Christian Andersen Park	50.0	Hans Christian Andersen Park is bounded by Chalk Hill road to the north and State Highway 246 to the south. The park is located 0.4 miles from the center of town and is within walking distance from Solvang Elementary School. Current facilities include four standard tennis courts, an equestrian trail, one main playground and a smaller, secondary playground, a passive play area, horseshoe pits, picnic areas and restrooms. A skate park and additional parking spaces were added in 2006. The Park offers a unique interaction with the natural landscape through distinct topography and riparian habitat of Adobe Canyon Creek consisting of oak woodland and coastal scrub communities. Approximately 48% of the city is within half a mile walking radius from Hans Christian Andersen Park.
Solvang Park	1.14	Solvang park is centrally located on Mission Drive (State Highway 246) between First Street and Park Way. The park features a bandstand, sheltered picnic areas with tables and benches, a restroom, the City Christmas tree, open lawn and small open play area.
Other Open Space Lands		
Creekside Open Space	6.0	The sloped, linear site is 6 acres (approximately 40'-60' wide) adjacent to Alamo Pintado Creek and Creekside residential neighborhoods in the northeast quadrant of the city. The land is undeveloped and is primarily a riparian area hosting a variety of plant and bird species. A bicycle path easement is adjacent to the site on State Highway 246 between Alamo Pintado Road and the Santa Ynez Valley High School.
Kronborg Open Space	2.99	The 2.99 acre site is located in the northwest quadrant of the city on Kronborg Drive, bound by Elsinor Drive to the east. The area is a steep drainage way within the residential neighborhood of Viking Hills. The slope constraints have limited the site to provide open views and serve as a wildlife corridor.
Lot 72 / Duff Mesa	16.2	Lot 72 is a 16.2 acre parcel located to the east of Alisal Road, north of Esrom Drive. The parcel is part of the 95 acre Mission Santa Ines National Historic District (see Chapter 4- Special Places) owned by three separate entities: The Archdiocese of Los Angeles owns Old Mission Santa Ines (40 acres), California State Parks owns the Santa Ines Mission Mills Property (39 acres) and the City of Solvang owns Lot 72.
Xeriscape Garden	0.25	The drought tolerant native garden is located northeast of Highway 246 and Pine Street. The site is approximately one quarter of an acre and is primarily used as a bypass for pedestrians and bikes traveling from Old Mission Road to Pine Street or Downtown.
Total:	78.58	
Source: City of Solvang Parks and Recreation Element, 2009		

Figure 21 -- Parks and Open Space Resources



2.3.4. Scenic Resources

Solvang is located in the western Santa Ynez Valley whose rich agricultural croplands, rolling hills, open spaces, rural character, scenic roadways, and natural features have attracted residents and visitors for decades. Preserving scenic features, including both natural and working landscapes, enhances the scenic values and economic development potential of the area and adds to the quality of life for existing and future residents. Scenic resources visible from the City include views of agricultural farms, vineyards and rolling hillsides in the foreground and more distant views of the Santa Ynez Mountains to the south and the Purisima Hills and San Rafael Range to the north.

Cropland and rangeland have high scenic value in the Santa Ynez Valley. The growth of the wine industry and the proliferation of vineyards has added a scenic quality to the area and has become an important component of the regional economy. Many of the scenic resources consist of views of agricultural areas, such as pastures, orchards, vineyards, ranches, barns, and farms with cattle and various livestock. Most roadways in the region offer some views of rural agricultural landscapes. During late winter and early spring, the rolling hillsides become a verdant green color and transition into the prototypical California landscape of yellow and brown dried grasses during summer and fall. The dense chaparral and oak woodlands on the north facing slopes of the Santa Ynez Mountains provide a rich green backdrop throughout the year.

The unique architectural character of the City is another important scenic resource. The Mission Santa Ines provides a visual landmark and is a cultural and historic resource of statewide importance. Views of the Mission and views from the Mission contribute to the visual character of the City and the Santa Ynez Valley.

Scenic Highways

Many of the highway corridors in the Solvang area contain elements that can make a highway "scenic," such as the natural landscapes that can be seen by traveling along the highway, the quality of the landscape, and the extent to which development intrudes upon a traveler's enjoyment of the view. Several of these highway corridors lead residents and visitors to area's recreational areas, including Lake Cachuma and Figueroa Mountain, and many ranches and wineries.

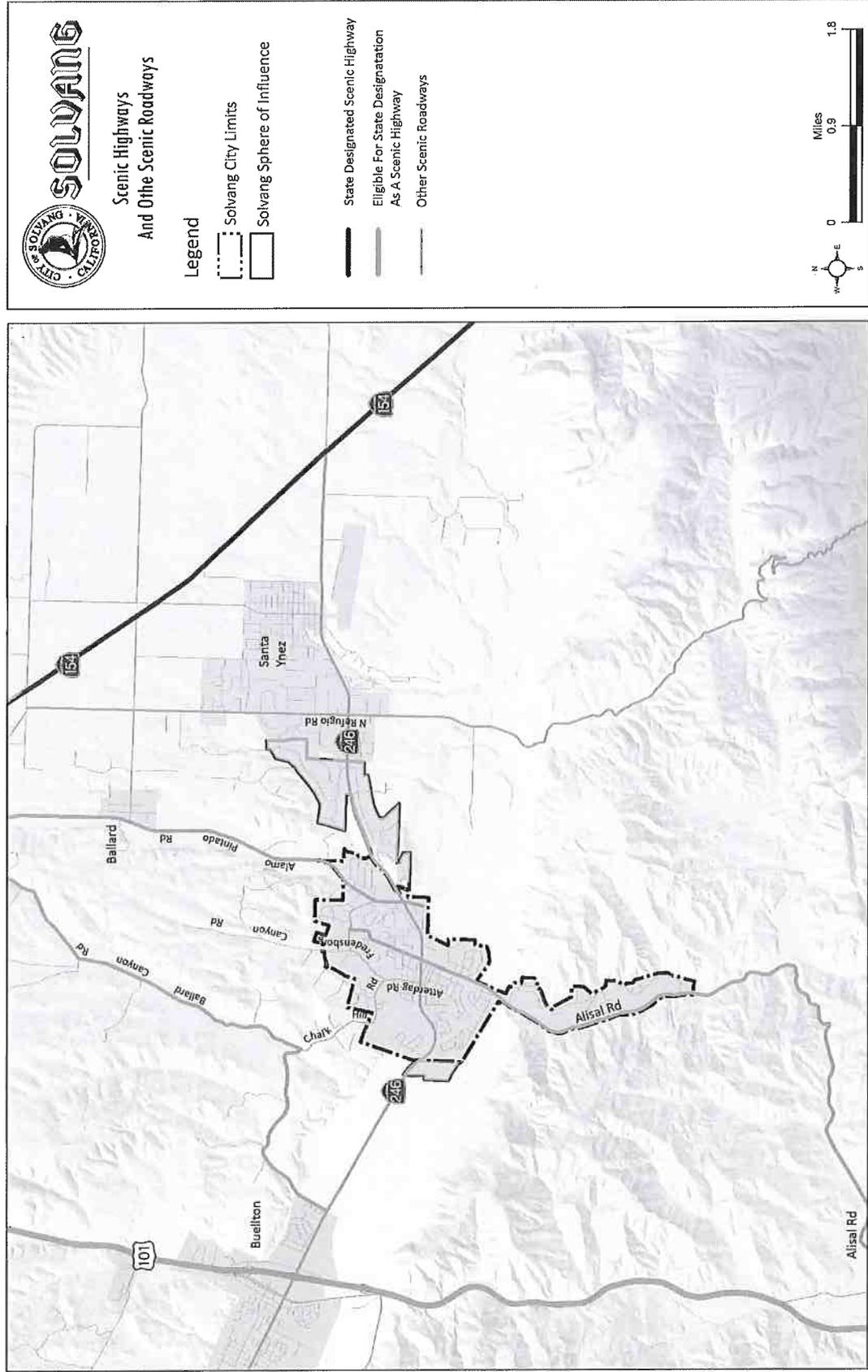
State Highway 154 is a State Scenic Highway as designated by the State of California (Figure 22). State Highway 101, which passes through Buellton about 5 miles west of Solvang, is considered eligible for State designation. Santa Barbara County has adopted a Scenic Highways Element of the general plan that designates rural and urban scenic highways in the Solvang area. The Scenic Highways Element sets forth procedures for designating "County Scenic Highways". However, to date no County scenic highways have been designated.

Figure

22

Scenic

Highways



2.4 Agricultural Resources

2.4.1. Important Terms Used In this Section

Important Farmlands. A collective term for farmlands designated as Prime, Unique, or as Farmlands of Statewide Importance under the Department of Conservation’s Farmland Mapping and Monitoring Program.

Soil Quality. The capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation.

Williamson Act. The most prevalent regulatory method of preserving farmland in the State of California, as well as the area around Solvang governed by Santa Barbara County.

2.4.2. Regulatory Setting

State Regulations

California Department of Conservation – Farmland Mapping and Monitoring Program. The California Department of Conservation (DOC), under the Division of Land Resource Protection, has developed the Farmland Mapping and Monitoring Program (FMMP), which monitors the conversion of the state’s farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to nonagricultural use. The program maintains an inventory of state agricultural land and updates the “Important Farmland Series Maps” every two years.

The FMMP is only an informational service and does not constitute state regulation of local land use decisions. Agricultural land is rated according to several variables including soil quality and irrigation status with Prime Farmland being considered the most optimal for agricultural production.

Williamson Act – California Land Conservation Act of 1965. The California Land Conservation Act of 1965 (Williamson Act, Government Code, Section 51200 et seq.) encourages the conservation of agricultural lands by providing a property tax incentive to owners who restrict land uses to agriculture and compatible uses. It is a voluntary program administered through local governments, which are responsible for contracting with landowners. Properties subject to Williamson Act contracts must remain in agricultural use for the duration of the contract, a minimum of 10 years. The contracts are self-renewing unless the property owner or a city or county has filed a Notice of Non-renewal. Filing a Notice of Non-renewal initiates an approximately nine-year period, after which the contract expires. Land in the vicinity of Solvang with active Land Conservation Act contracts is shown on Figure 23.

Figure 23

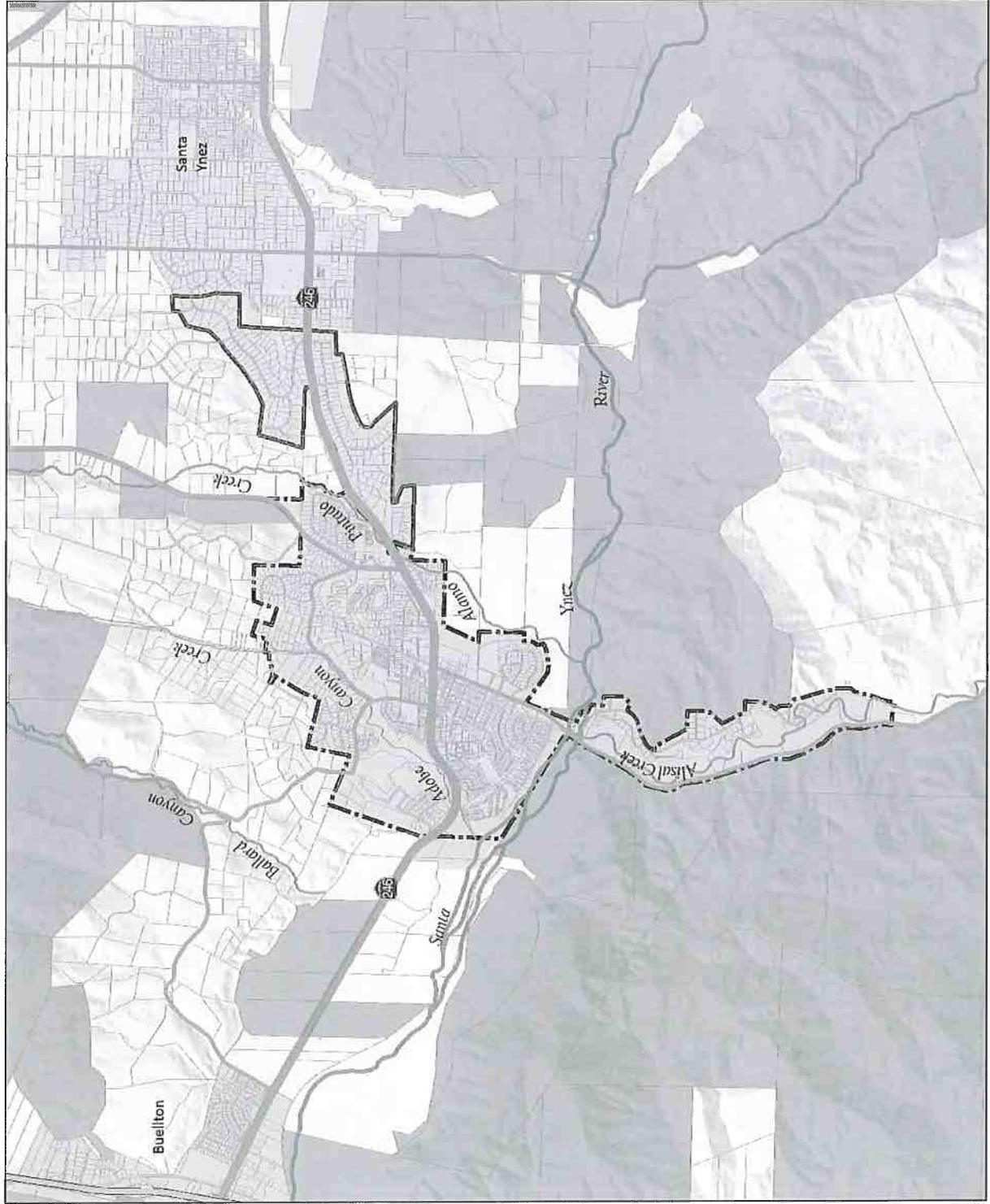
Land

Conservation

Act

Contracted

Lands



SOLVANG
CITY OF SOLVANG • WINDOLFO

Parcels Subject to A Land Conservation Act (Williamson Act) Contract

Legend

- City Limits
- Solvang Sphere of Influence
- Freeway
- Highway
- Primary Roadways
- Properties Subject To An Active Land Conservation Act Contract

Sources: Santa Barbara County Assessor, 2010

Scale: 0, 0.7, 1.4 Miles

Compass: N, S, E, W

Local Agency Formation Commission (LAFCO) Boundary Controls. Under California's much amended Cortese-Knox-Hertzberg Act, each county has a Local Agency Formation Commission with the power to review and decide on proposals for the expansion of city or special district boundaries. LAFCOs lack official authority over land use, but their boundary decisions, especially those dealing with city expansions, certainly can influence the local pattern of urbanization and its impact on agricultural land. Like most LAFCOs, the Santa Barbara County LAFCO is a five member body with two members from the Board of Supervisors, two members from city councils in the county, and one public member (three alternate members, one from each category). State law requires LAFCOs to consider agricultural land and open space preservation in all decisions related to expansion of urban development.

Local Regulations

Agricultural Zoning. Zoning is the mechanism used by California counties and cities to organize different land uses and establish standards of urban development and resource preservation. Agricultural zoning is the principal regulatory device for protecting agriculture from urbanization, by assigning parcel size requirements and allowable uses to different classifications of agricultural land.

Right-to-Farm Ordinance. Along with most other California counties and a few cities, Santa Barbara County has adopted a Right-to-Farm ordinance. The ordinance addresses the problem of urban growth encroaching on agricultural land by seeking to reduce nuisance complaints about farm operations from residential neighbors. This is an educational and disclosure measure, not a regulatory requirement. Using several different disclosure methods, purchasers and existing owners of residential property are informed about the local importance of agriculture and the possible negative impacts of residing near normal farm operations. The ordinance is intended to protect existing farming operations from pressure to cease or curtail operations when residential development occurs nearby.

2.4.3. Agricultural Land In the Solvang Area

California is the leading state in agricultural production in the United States and Santa Barbara County consistently ranks within the top 20 counties of the State in overall agricultural productivity. Agriculture continues to be the county's major producing industry. According to the 2013 Agricultural Production Report, the 2013 gross production was valued at \$ 1,436,651,418. This is a \$145 million (approximately 10 %) increase in gross value when compared with the 2012 figures. The top five crops by value in Santa Barbara County in 2013 included: strawberries (\$464.7 million), wine grapes (\$163.3 million), Broccoli (\$136.1 million), head lettuce (\$75.8 million), and avocados (\$49.6 million). The county has become an increasingly important winemaking region, and the trend of the past two decades to convert ranchlands to vineyards continues. In the Solvang area, wine tourism and the wine industry have become an important component of the local and regional economy.

The City's Plan Area does not contain any land in agricultural production. However, agricultural lands surrounding the City provide an important open space and visual resource while contributing to the production of food and fiber.

Soil Classifications

The United States Department of Agriculture Storie Index evaluates the general suitability of soils for agriculture, based on four factors that represent the inherent characteristics and qualities of the soils. The California Revised Storie Index rates soil on a scale from 1 to 6, with 1 being the best. The Storie Index does not consider physical or economic factors, such as irrigation, that might determine the desirability of growing certain plants in a given area.

The Natural Resources Conservation Service (NRCS) is the primary source of information concerning the suitability of soils for agricultural use. The NRCS has developed a "Land Capability Classification System" that organizes soils into eight categories rated one through eight. Arable lands are organized into Classes I through IV:

- Class I** Prime farm land, with few limitations.
- Class II** Soils have moderate limitations, reducing cropping options and/or requiring moderate conservation practice implementation.
- Class III** Soils have severe limitations, reducing cropping options and/or requiring moderate conservation practice implementation.
- Class IV** Soils have very severe limitations, requiring careful choices of crops and conservation practices

The NRCS classification for soils in the vicinity of Solvang are shown on Figure 24.

The California Division of Land Resource Protection uses another soils classification system: the Important Farmland Inventory (IFI), which is the source data for the State's Farmland Mapping and Monitoring Program. This program provides a source of information for state and local agencies concerned with agricultural land conversion. The IFI identifies five farmland categories: prime farmland, farmland of statewide importance, farmland of local importance, unique farmland, and grazing lands:

Prime Farmland (P). Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Download information on the soils qualifying for Prime Farmland.

Farmland of Statewide Importance (S). Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland (U). Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Local Importance (L). Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Grazing Land (G). Grazing Land is defined in Government Code §65570(b)(3) as:

"...land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock."

The minimum mapping unit for Grazing Land is 40 acres. Grazing Land does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

Soils classified in accordance with the IFI classifications described above are shown on Figure 24. The Prime Farmland designation is based on such factors as the availability of a reliable water supply, the area's temperature range, depth of the water table, soil permeability, and other considerations. Generally, soils receiving a Class 1 or 2 rating under the NRCS Land Capability Classification System (assuming that irrigation is feasible) are designated as IFI Prime Farmland.

Table 15 compares the soil classifications for major soil types in the City's Plan Area. As shown on Table the agricultural suitability of soils varies from "Poor" to "Prime".

Table 15 -- Major Soil Types in the Solvang Area, And Their Agricultural Suitability Classifications

Soil Type	California Revised Storie Index ¹	NRCS Land Capability Classification ¹	Important Farmland Inventory Classification ²
Ballard Fine sandy loam, 0 to 2 percent slopes	Grade 3 -- Fair	I	Prime
Ballard Fine sandy loam, 2 to 9 percent slopes	Grade 3 -- Fair	II	Farmland of Local Importance
Santa Ynez gravelly fine sandy loam, 2 to 9 percent slopes	Grade 4 -- Poor	III	Unique Farmland
Santa Ynez gravelly fine sandy loam, 9 to 15 percent slopes	Grade 4 -- Poor	IV	Unique Farmland
Botella sandy fine loam, 2 to 9 percent slopes	Grade One -- Excellent	II	Prime
Botella sandy fine loam, 0 to 2 percent slopes	Grade One -- Excellent	I	Prime
Elder sandy loam, 2 to 9 percent slopes	Grade two -- Good	II	Prime
Positas fine sandy loam, 2 to 9 percent slopes	Grade two -- Good	III	Unique Farmland
Agueda silty clay loam, 0 to 2 percent slopes	Grade two -- Good	I	Prime
Sorrento loam, 2 to 9 percent slopes	Grade One -- Excellent	II	Prime
Mocho loam	Grade One -- Excellent	I	Prime

Sources:

1. Natural Resource Conservation Service, Web Soil Survey, 2014; <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
2. California Department of Conservation, Important Farmland Inventory; <http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx>

Figure 24 – Important Farmland Based On NRCS Soil Classifications

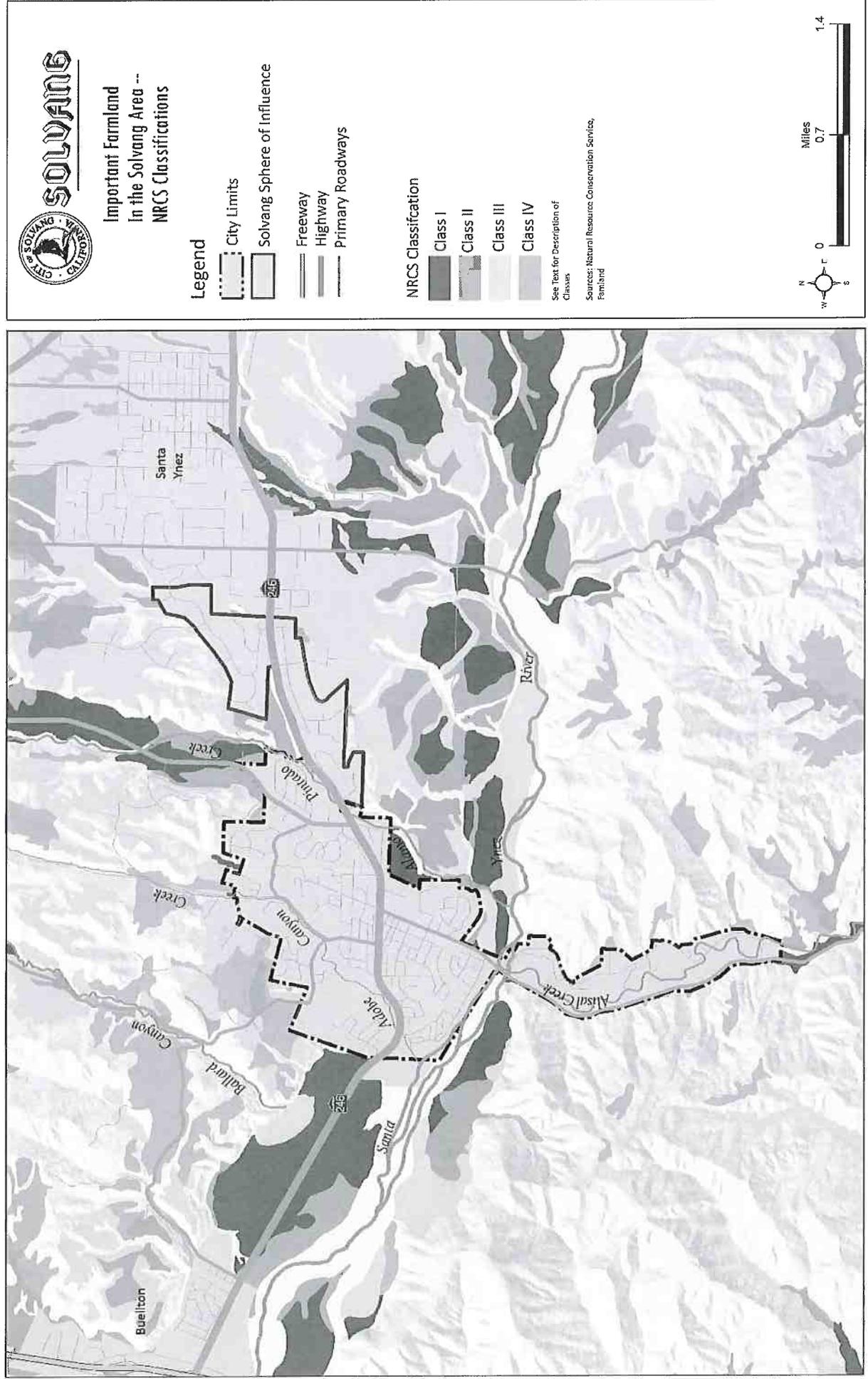
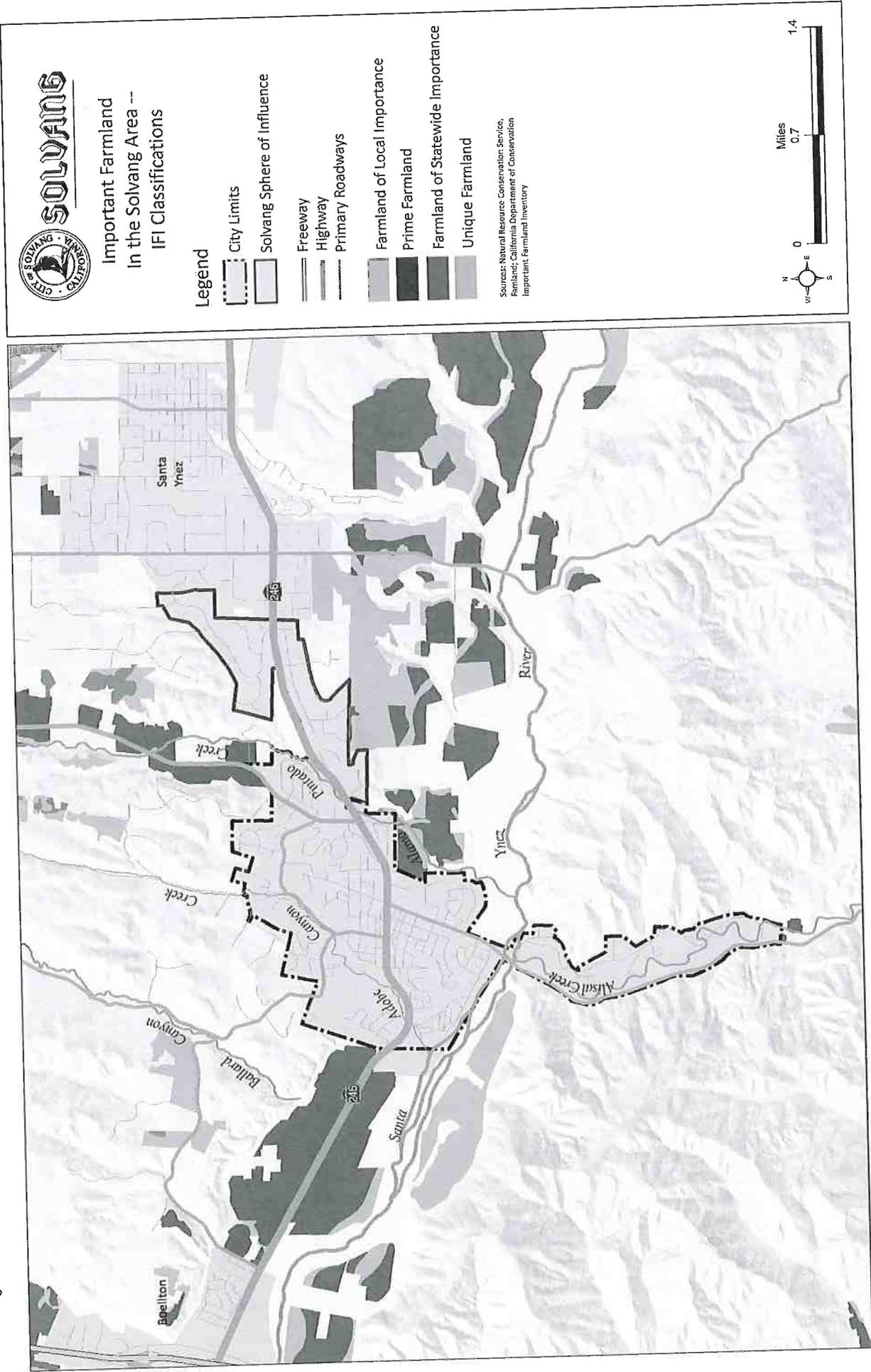


Figure 25 -- Important Farmland Inventory Soils Classifications



2.5 Biological Resources

2.5.1. Important Terms Used In this Section

CDFW. California Department of Fish and Wildlife

CESA. California Endangered Species Act of 1984 (14 CCR 670.5)

CEQA. California Environmental Quality Act (Public Resources Code, § 21000 et seq.)

CNPS. California Native Plant Society

Critical Habitat. Specific areas designated by the U.S. Fish and Wildlife Service (USFWS) as essential to the conservation of a Federally-listed species and which may require special management considerations or protection. On city, county, state, or private land where there is no Federal involvement, a critical habitat designation *has no regulatory impact*. In other words, designation of critical habitat generally does not affect non-Federal land unless and until the property owner needs a Federal permit or requests Federal funding for a project.

Endangered (also abbreviated “E”). A species whose survival and reproduction in the wild is in immediate jeopardy from one or more causes: including loss of habitat, change in habitat, over exploration, predation, competition, disease, or other factors.

FESA. Federal Endangered Species Act of 1973 (50 CFR 17.12)

HCP. Habitat Conservation Plan

NMFS. National Marine Fisheries Service

Rare. A plant species that, although not presently threatened with extinction, is present in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.

Riparian. Of, on, or pertaining to the bank of a natural course of water. For example, riparian vegetation is composed of plant species normally found near streams, lakes, and other freshwater bodies, such as lakes, ponds, and reservoirs.

Riparian Corridors. A corridor of riparian vegetation adjacent to perennial and intermittent streams or other freshwater bodies.

Special-Status Species. Rare, threatened, or endangered plant or animal species protected by Federal, State, or other agencies in accordance with any of the following:

- FESA
- CESA
- State Species of Concern list or Special Animals list (case-by-case basis)
- CDFG Fully Protected Species List [Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and
- amphibians), and 5515 (fish) of the California Fish and Game Code]

- California Native Plant Protection Act (plants listed as rare, threatened or endangered by the
- California Native Plant Society (CNPS); or
- Section 15380 of the CEQA guidelines.

Take. To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (emphasis added).

Threatened (also abbreviated “T”). A species that is abundant in parts of its range, but declining in overall numbers and likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

USACE. United States Army Corps of Engineers

USEPA. United States Environmental Protection Agency

USFWS. United States Fish and Wildlife Service

USFS. United States Forest Service

Waters of the United States. A body of water with a defined bed and bank and an ordinary high water mark. Also defined in Section 404 of the Clean Water Act as hydric features regulated by the Clean Water Act that are not defined as wetlands. Waters of the U.S. include lakes, rivers, and intermittent streams.

Wetlands. Areas that are inundated or saturated by surface or groundwater to support a prevalence of vegetation typically adapted for life in saturated soil conditions. This definition of wetlands requires three wetland identification parameters to be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Wetlands can be areas that are consistently inundated or seasonally inundated. Wetlands are delineated according to the USACE 1987 Wetlands Delineation Manual, and are a subset of Waters of the United States.

2.5.2. Regulatory Setting

Federal Laws and Regulations

Federal Endangered Species Act. The U. S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) administer the Federal Endangered Species Act (FESA). The FESA requires each agency to maintain lists of imperiled native species and affords substantial protections to these “listed” species. NMFS’ jurisdiction under the FESA is limited to the protection of marine mammals, marine fishes, and anadromous fishes; all other species are subject to USFWS jurisdiction. The USFWS and NMFS may “list” a species if it is endangered (at risk of extinction throughout all or a significant portion of its range) or threatened (likely to become endangered within the foreseeable future). Section 9 of the FESA prohibits the “take” of any wildlife species listed as endangered and most species listed as threatened. Take, as defined by the FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Harm is defined as “any act that kills or injures the species, including significant habitat modification or degradation where it actually kills

or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 CFR 17.3).

Federal Clean Water Act, Section 404—Programmatic General Permit for Wetland Fill. The Clean Water Act (CWA) is the primary Federal law that protects the quality of the nation's waters, including wetlands, lakes, rivers, and coastal areas. Section 404 of the CWA regulates the discharge of dredged or fill material into the waters of the United States, including wetlands. The CWA holds that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; issuance of such permits constitutes its principal regulatory tool.

The U.S. Army Corps of Engineers (USACE) is authorized to issue Section 404 permits, which allow the placement of dredged or fill materials into jurisdictional waters of the United States under certain circumstances. The USACE issues two types of permits under Section 404:

- General permits (either nationwide permits or regional permits) and standard permits (either letters of permission or individual permits). General permits are issued by the USACE to streamline the Section 404 permitting process for nationwide, statewide, or regional activities that have minimal direct or cumulative environmental impacts on the aquatic environment.
- Standard permits are issued for activities that do not qualify for a general permit (i.e., that may have more than a minimal adverse environmental impact).

Federal Clean Water Act, Section 401—Programmatic Water Quality Certification. Under the CWA Section 401, applicants for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate. Therefore, all projects that have a Federal component and may affect state water quality (including projects that require Federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401 and the State's Porter-Cologne Water Quality Control Act. In California Section 401 certification is handled by the Regional Water Quality Control Boards. Santa Barbara County falls under the jurisdiction of the Central Coast Regional Water Quality Control Board (CCRWQCB). The CCRWQCB must certify that the discharge will comply with State water quality standards and other requirements of the CWA.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act of 1918, as amended (MBTA), implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful, as is taking of any parts, nests, or eggs of such birds (16 U.S. Government Code [USC] 703). Take is defined more narrowly under the MBTA than under FESA and includes only the death or injury of individuals of a migratory bird species or their eggs. As such, take under the MBTA does not include the concepts of harm and harassment as defined under FESA.

State Laws and Regulations

California Endangered Species Act. Administered by the California Department of Fish and Wildlife (CDFW), California ESA prohibits the take of listed species and also species formally under consideration for listing ("candidate" species) in California. Under CESA take means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish and Game Code § 86.) Under this definition, and in contrast to the ESA, CESA does not prohibit

“harm” to a listed species. Furthermore, take under the CESA does not include “the taking of habitat alone or the impacts of the taking”². However, the killing of a listed species that is incidental to an otherwise lawful activity and not the primary purpose of the activity constitutes a take under CESA. CESA does not protect insects, but with certain exceptions prohibits the take of plants on private land.

State Fish and Game Code Section 1600-1616—Master Streambed Alteration Agreement for Streambed Modifications. CDFG has jurisdictional authority over streams, lakes, and wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq. CDFG has the authority to regulate work that will “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris waste or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake” (Fish and Game Code § 1602.). An entity that proposes to carry out such an activity must first inform CDFG. Where CDFG concludes that the activity will “substantially adversely affect an existing fish or wildlife resource,” the entity proposing the activity must negotiate an agreement⁴ with CDFG that specifies terms under which the activity may be carried out in a way that protects the affected wildlife resource. CDFG can enter into programmatic agreements that cover recurring operation and maintenance activities or regional plans. These agreements are sometimes referred to as “master streambed alteration agreements.”

California Fish and Game Code 3503 (Bird Nests). Section 3503 of the California Fish and Game Code makes it “unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” Therefore, CDFW may issue permits authorizing take.

California Fish and Game Code 3503.5 (Birds of Prey). Section 3503.5 of the California Fish and Game Code prohibits the take, possession, or destruction of any birds of prey or their nests or eggs “except as otherwise provided by this code or any regulation adopted pursuant thereto.” CDFG may issue permits authorizing take of birds of prey or their nests or eggs pursuant to CESA or the NCCP Act.

California Environmental Quality Act. CEQA is similar to, but more extensive than NEPA in that it requires significant environmental impacts of proposed projects be reduced to a less-than-significant level through adoption of feasible avoidance, minimization, or mitigation measures unless overriding considerations are identified and documented that make the mitigation measures or alternative infeasible. CEQA applies to certain activities in California undertaken by either a public agency or a private entity that must receive some discretionary approval from a California government agency.

2.5.3. Wildlife Habitats In and Around Solvang

Wildlife habitats provide food, shelter, movement corridors, and breeding opportunities for wildlife species. They are classified in general terms with an emphasis on vegetation structure, vegetation

species composition, soil structure, and water availability. Some wildlife species are generalists that use a variety of habitats, while other species are adapted to very specific habitats. Species that are limited to a single habitat type are more vulnerable to habitat loss and disturbance than are generalists and, therefore, may be more at risk to experience population declines. Figure 26 identifies the various types of habitats found in the City's Plan Area.

Habitat for many wildlife species includes a mosaic of habitat types. More common wildlife species, such as red-shouldered hawk (*Buteo lineatus*), great-horned owl (*Bubo virginianus*), northern flicker (*Colaptes auratus*), raccoon (*Procyon lotor*), and western toad (*Bufo boreas*) frequently use more than one habitat type. They may use riparian habitat for breeding sites, resting sites, cover while moving from one area to another, or thermal cover, and range into open upland grasslands, scrub, or over open water to forage. Frequently the greatest number of these more common wildlife species will be found at edges, where habitats convert from one type or another.

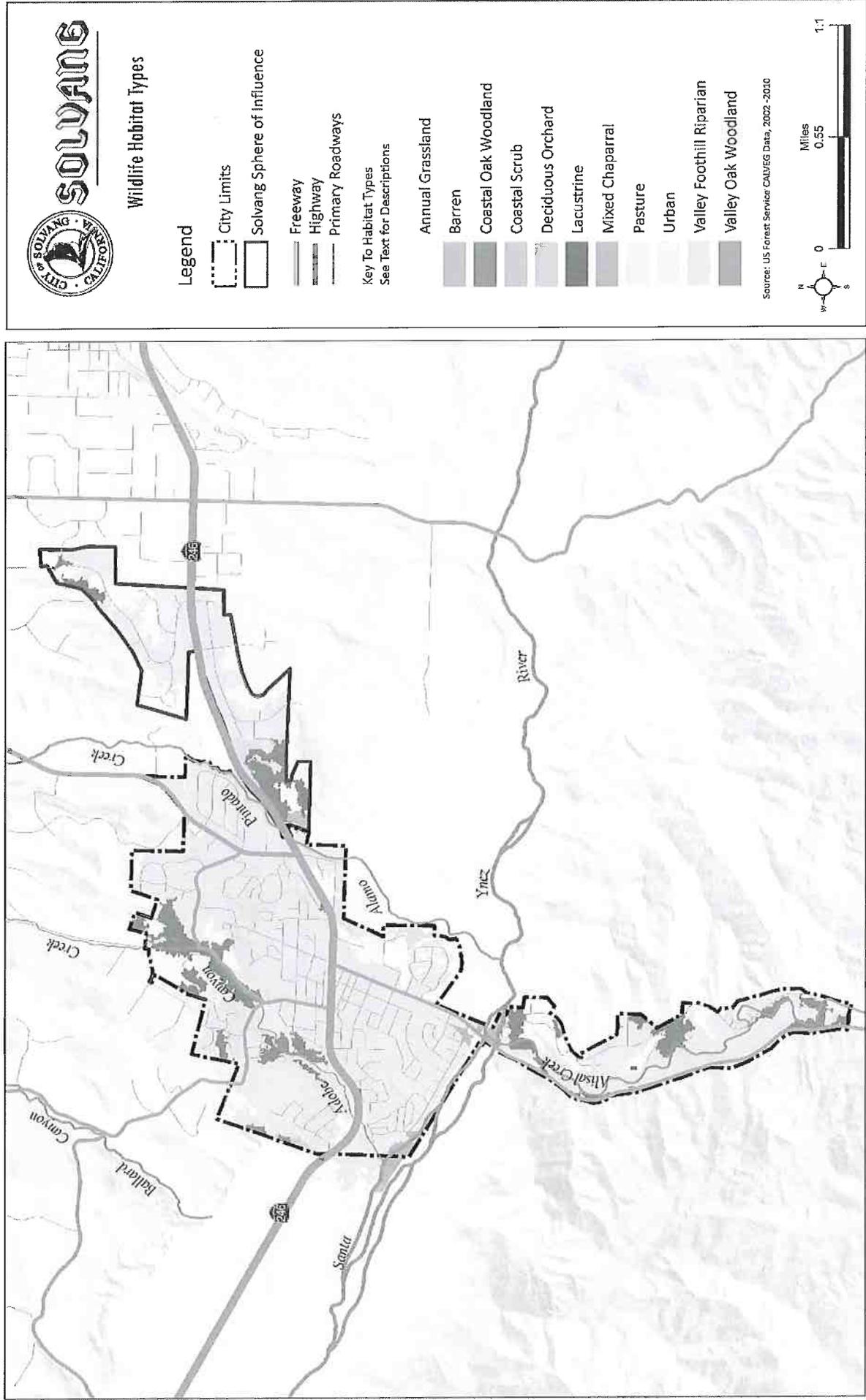
Table 16 provides a summary of habitats within the City's Plan Area (the existing city limits and sphere of influence). The habitats are described below.

Table 16 -- Habitat Types Within the City's General Plan Area	
Habitat Type	Acres
Annual Grassland	31.7
Barren	2.1
Coastal Oak Woodland	16.2
Coastal Scrub	0.5
Deciduous Orchard	0.3
Mixed Chaparral	0.01
Urban	128.1
Valley Foothill Riparian	2.7
Valley Oak Woodland	0.2
Water/Wetlands and Lacustrine	0.1
Total:	181.9
Source: US Forest Service CALVEG, 2002 – 2010; http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192	

Figure 26

Wildlife Habitat - Within the City's

Plan Area



Annual Grassland. Annual grassland habitats comprise 31.7 acres of the Plan Area. These are areas composed of open grasslands primarily of annual plant species and which occupy what was once pristine native grassland. This habitat type occurs mostly on flat plains to gently rolling foothills. Many grassland species also occur as understory plants in oak woodland and other habitats. Structure in annual grassland depends largely on weather patterns and livestock grazing.

Many wildlife species use annual grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Characteristic reptiles that breed in grassland habitats include the western fence lizard, common garter snake, and western rattlesnake. Mammals typically found in this habitat include the black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, western harvest mouse, California vole, badger, and coyote. This habitat also provides important foraging habitat for the turkey vulture, American kestrel, black-shouldered kite, and prairie falcon.

Barren. Landscape classified as barren comprises 2.1 acres of the Plan Area. Barren habitat is defined by the absence of vegetation. Any habitat with <2 percent total vegetation cover by herbaceous, or non-wildland species and <10 percent cover by tree or shrub species is defined this way. The physical settings for permanently barren habitat represent extreme environments for vegetation. An extremely hot or cold climate, a near-vertical slope, an impermeable substrate, constant disturbance by either human or natural forces, or a soil either lacking in organic matter or excessively saline can each contribute to a habitat being inhospitable to plants. This habitat typically includes areas of exposed rock, talus slopes, and bare ground/dirt that do not support vegetation. Barren habitat does have value for wildlife. Many hawks and falcons nest on rock ledges.

Coastal Oak Woodland. Coastal oak woodland consists of 16.2 acres of the Plan Area. Coastal oak woodland is extremely variable in species composition. Typically, the overstory consists of deciduous and evergreen hardwoods mixed with scattered conifers. Coast live oak dominates the overstory with understory shrubs in the county such as California blackberry (*Rubus ursinus*), common snowberry (*Symphoricarpos albus*), toyon (*Heteromeles arbutifolia*), and herbaceous plants such as California polypody (*Polypodium californicum*), bracken fern (*Pteridium aquilinum* var. *pubescens*), and miner's lettuce (*Claytonia perfoliata*).

In drier areas with the oaks more widely spaced, the understory may consist entirely of grassland species with a few shrubs. Where coast live oak woodlands intergrade with chaparral, species such as chamise (*Adenostoma fasciculatum*), chaparral currant (*Ribes malvaceum*), and ceanothus form the understory. When coast live oak intergrades with coastal scrub, sticky monkeyflower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis*), and California sagebrush (*Artemisia californica*), among other species, forms the understory. A wide variety of birds, including Western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), white-breasted nuthatch (*Sitta carolinensis*), western bluebird (*Sialia mexicana*) and black-headed grosbeak (*Pheucticus melanocephalus*) use oak communities for nesting, foraging, and shelter. Other wildlife species that use oak woodlands include common garter snake, big brown bat (*Eptesicus fuscus*), deer mouse (*Peromyscus maniculatus*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), coyote, and mule deer, among many others.

Coastal Scrub. Coastal scrub habitat covers approximately 0.5 acres of the Plan Area. Coyote brush tends to dominate the overstory and is commonly associated with ceanothus, coffeeberry, sticky monkeyflower, blackberry, California sagebrush, California buckwheat, and poison-oak.

Bracken fern and sword fern (*Polystichum munitum*) are dominant in the understory alongside common parsnip (*Heracleum maximum*), paintbrush (*Castilleja* spp.), yerba buena (*Saturja douglasii*), and California oatgrass (*Danthonia californica*). Although vegetation productivity is lower in coastal scrub than in adjacent chaparral habitats, coastal scrub supports a wide variety of vertebrate species.

Deciduous Orchard. Deciduous orchards consist of fruit trees and vineyards which support similar species as pasture and agricultural land. Deciduous orchard occupies 0.3 acres of the Plan Area.

Mixed Chaparral. Mixed chaparral covers approximately 0.01 acres of the Plan Area. This habitat type supports a wide variety of plant species. Composition changes with precipitation, aspect, and soil type. Species that are common in this habitat include several species of ceanothus and manzanita, chamise, ashy silk tassel (*Garrya flavescens*), toyon, yerba santa (*Eriodictyon californicum*), sumac, hollyleaf cherry (*Prunus ilicifolia*), and California fremontia (*Fremontodendron californicum*).

Urban. Land classified as urban areas covers approximately 128.1 acres of the Plan Area. The urban landscape consists of developed land. This classification also includes golf courses and urban parks. Wildlife species that use urban habitat vary depending on the density of development, the surrounding land use, and the types and availability of vegetation and other habitat features available for foraging, nesting, and cover. In general, however, wildlife habitat in urban areas consists of landscaped areas with a mix of both native and exotic ornamental plant species. Species using these areas are conditioned to a greater level of human activity than those in natural and less developed areas. Generally, the more developed an urban area is (e.g., downtown), the less diverse the species will be. Wildlife species typically found in urban habitat include American crow, rock dove (*Columba livia*), American robin (*Turdus americana*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), raccoon, Virginia opossum, and striped skunk.

Valley Foothill Riparian. Valley foothill riparian habitat covers approximately 2.7 acres of the Plan Area. Dominant species in the canopy layer are cottonwood, California sycamore, and valley oak. Subcanopy trees include white alder (*Alnus rhombifolia*), boxelder (*Acer negundo*), and red willow (*Salix laevigata*). Typical understory shrubs include wild rose, California blackberry, blue elderberry, poison oak, and willows (*Salix* spp.). Valley foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife. Several rare frog species including California red-legged frog (*Rana draytonii*) and foothill yellow-legged frog (*Rana boylei*) use this habitat.

Valley Oak Woodland. Valley oak woodlands cover 0.2 acres of the Plan Area. The overstory is made up of almost exclusively valley oaks. Other trees associated with valley oak woodland include California sycamore (*Platanus racemosa*), coast live oak, foothill pine, and blue oak. Typical shrubs found in this habitat include poison oak, blue elderberry (*Sambucus mexicana*), toyon, California coffeeberry, and California blackberry. The ground cover consists typically of wild oats, bromes, barley (*Hordeum* spp.), perennial ryegrass (*Lolium perenne*), and needlegrasses. Valley oak woodlands provide breeding habitat for a large variety of wildlife species, with common species similar to that described for coastal oak woodland habitat.

Water and Wetlands. Water habitat includes both lacustrine and riverine habitats. Lacustrine includes lakes, reservoirs, ponds, and ponded areas along streams, while riverine includes

rivers, and streams. Water habitats typically support fish species and also provide foraging, cover, and breeding habitat for other aquatic species such as pond turtle (*Actinemys marmorata*), amphibians, various waterfowl and fish-eating species such as belted kingfisher (*Ceryle alcyon*) and great blue heron (*Ardea herodias*). Wetland areas are important resources and include freshwater seeps rivers and streams, and all other areas which are periodically or permanently covered by shallow water, or dominated by hydrophilic vegetation, or in which the soils are predominantly hydric in nature. Notable lakes and reservoirs in the area are Lake Cachuma and Alisal Lake.

Surface water that passes through the Plan Area (Figure 26) along the Santa Ynez River, Alamo Pintado Creek, Adobe Canyon Creek and Alisal Creek supports the most diverse and sensitive habitats in the Plan Area. The Santa Ynez River supports four general types of riparian and wetland vegetation:

Willow thickets. These are areas lining active channels that receive regular, frequent flood flows and lack large, mature trees, all vegetation having become established subsequent to scouring floods within approximately the last 10 years. These areas are very densely vegetated and dominated by willows—chiefly sandbar willow (*Salix exigua* var. *exigua*) and arroyo willow (*S. lasiolepis*)—with mulefat and white melilot also forming a major component of the canopy. Saplings of Southern California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), black cottonwood (*Populus trichocarpa*), red willow (*Salix laevigata*), and shining willow (*S. lasiandra* var. *lasiandra*) are also present. Arroyo willow thickets have generally been assigned a sensitivity ranking of G4 S4 by CDFW (see discussion of Special Status species, below).

Black cottonwood forest—These are areas supporting mature trees and large shrubs along the banks of the floodplain, which demarcate the highest elevation of infrequent flooding within the river. These areas are dominated by black cottonwood and support numerous medium and large trees, including coast live oak (*Quercus agrifolia* var. *agrifolia*), Southern California black walnut, western sycamore, red willow, shining willow, arroyo willow, and the non-native Canary Island date palm (*Phoenix canariensis*). Shrubs include mulefat, California coffeeberry (*Frangula californica*), redberry (*Rhamnus crocea*), and toyon. The understory is a mix of herbaceous or scrambling semi-woody species including poison-oak (*Toxicodendron diversilobum*), fennel, cocklebur, salt heliotrope (*Heliotropium curassavicum*), willowherb, virgin's bower (*Clematis ligusticifolia*), dwarf stinging-nettle (*Urtica urens*), and nutsedge. Although black cottonwood forest has generally been assigned a sensitivity ranking of G5 S3, CDFW considers this a sensitive community.

California bulrush marsh. A large excavated depression within the sand and gravel mining operation along the Santa Ynez River supports a well-developed wetland/pond/woodland complex edged by willow thickets and black cottonwood forest and also supporting a small marsh of California bulrush and narrowleaf cattail. California bulrush marsh has been assigned a sensitivity ranking of G5 S4 by CDFW.

Disturbed pond.

Dominant plant species within this area are chiefly ruderal species and include Russian-thistle (*Salsola tragus*), weedy cudweed (*Gnaphalium luteoalbum*), castor-bean (*Ricinus communis*), white melilot, and rabbit's foot grass. This vegetation type has not been assigned a sensitivity ranking by CDFW.

Habitat Connectivity

Habitat connectivity is an umbrella term referring to all of the factors relating to integration of habitats within an ecosystem. Wildlife corridors and habitat linkages are features that promote habitat connectivity. Wildlife corridors are typically discrete linear features within a landscape that are constrained by development or other non-habitat areas. Habitat linkages are networks of corridors and larger natural open space areas that encompass an adequate diversity and acreage of useable habitats to provide long-term resilience of ecosystems against the detrimental effects of habitat fragmentation, which creates isolated “islands” of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open-space areas, various studies have concluded that many wildlife and plant species would not likely persist over time in fragmented or isolated habitat areas because they prohibit the movement of new individuals and genetic information among areas where they may be periodically displaced by natural or human-caused disturbances such as disease, fire, flood, etc. Habitat linkages mitigate the effects of this fragmentation by:

- allowing plant and animal species to disperse between remaining habitat areas, thereby permitting at-risk populations to maintain sustainable levels of genetic variability;
- providing escape routes from fire, predators, and human disturbances, thus reducing the risk of
- catastrophic events (such as fire or disease) causing population or local species extinction; and
- serving as travel routes for individual animals as they move within their home ranges in search of
- food, water, mates, and other needs.

The Plan Area contains creek corridors and a portion of the Santa Ynez River that provide important avenues of dispersal and home range movement for a diversity of species, chiefly riparian and wetland obligate species such as fish, amphibians, birds, and several plant species, but also for a number of upland species that may forage within the river or else may utilize the river as a movement corridor due to constrictions in natural upland habitat to the east and west.

2.5.4. Special Status Species

Special-status species are plants and animals that are legally-protected under the Federal and State Endangered Species Acts, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Table 17 lists special-status species with potential to occur in the City’s Plan Area and in the vicinity organized by their: Federal, State, CDFW, and CNPS designation; known occurrence in the area; and landscape group association. This list includes all species from existing Federal and State lists, although some species may be of very low distribution or abundance. However, it is important to consider site-specific conditions when considering activities that may adversely impact biological resources.

Table 17 -- Special-Status Species With The Potential To Occur In The Solvang Area					
Species	Listing			Landscape Cover Group	Potential Habitat Within the Plan Area
	Federal	State	CDFW or CNPS		
Amphibians/Reptiles					
California red-legged frog <i>Rana draytonii</i>	T	--	SSC	S	Yes
Foothill yellowlegged frog <i>Rana boylei</i>	FSS	--	SSC	S	Yes
Coast Range newt <i>Taricha torosa</i>	--	--	SSC	S	Yes
Silvery legless lizard <i>Anniella pulchra pulchra</i>	--	--	SSC	G	Yes
Western pond turtle <i>Emys marmorata</i>	--	--	SSC	S	Yes
Two-striped garter snake <i>Thamnophis hammondi</i>	--	--	SSC	G/S	Yes
Insects					
Monarch butterfly <i>Danaus plexippus</i>	--	--	SSC	W	Yes
Birds					
Tri-colored blackbird <i>Agelaius tricolor</i>	--	--	SSC	R	Yes
Cooper’s hawk <i>Accipiter cooperii</i>	--	--	WL	W	Yes
Golden eagle <i>Aquila chrysaetos</i>	--	--	FP,WL	G,W	Yes
Ferruginous hawk <i>Buteo regalis</i>	--	--	WL	G	Yes
California homed lark <i>Eremophila alpestrisactia</i>	--	--	SSC	G	Yes
Least Bell’s Vireo <i>Vireo bellii pusillus</i>	E	E	--	R	Yes
Purple martin <i>Progne subis</i>	--	--	SSC	G,W	Yes
Yellow breasted chat <i>Icteria virens</i>	--	--	SSC	W	Yes
Yellow warbler <i>Setophaga petechial</i>	--	--	SSC	R	Yes
California spotted owl <i>Strix occidentalis occidentalis</i>	--	--	SSC	W	Yes

Table 17 -- Special-Status Species With The Potential To Occur In The Solvang Area					
Species	Listing			Landscape Cover Group	Potential Habitat Within the Plan Area
	Federal	State	CDFW or CNPS		
Southwest willow flycatcher <i>Empidonax traillii extimus</i>	E	E	--	R	Yes
Fish					
Southern steelhead <i>Oncorhynchus mykiss irideus</i>	E	--	SSC	S	Yes
Mammals					
American badger <i>Taxidea taxus</i>	--	--	SSC	G	Yes
Pallid bat <i>Antrozous pallidus</i>	--	--	SSC	B	No
Plants					
Sonoran maiden fern <i>Thelypteris puberula</i> var. <i>sonorensis</i>	--	--	2.2		
Santa Ynez groundstar <i>Ancistrocarphus keilii</i>	--	--	1B.1		
Dwarf calycadenia <i>Calycadenia villosa</i>	--	--	1B.1		
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	--	--	2.1		
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--	--	1B.1		
Santa Barbara honeysuckle <i>Lonicera subspicata</i> var. <i>subspicata</i>	--	--	1B.2		
Hoffmann's bitter gooseberry <i>Ribes amarum</i> var. <i>hoffmannii</i>	--	--	3		
Chaparral ragwort <i>Senecio aphanactis</i>	--	--	2.2		
Hoover's bent grass <i>Agrostis hooveri</i>	--	--	1B.2		
California sawgrass <i>Cladium californicum</i>	--	--	2.2		
Black-flowered figwort <i>Scrophularia atrata</i>	FSC	--	1B.2		Yes
Catalina mariposa lily <i>Calochortus catalinae</i>	--	--	4		Yes
Late-flowered mariposa lily <i>Calochortus weedii</i> var. <i>vestus</i>	--	--	1B.2		Yes
Refugio manzanita <i>Arctostaphylos refugioensis</i>	--	--	1B.2		
White-veined monardella <i>Monardella hypoleuca</i> ssp. <i>Hypoleuca</i>	--	--	1B.3		
late-flowered mariposa-lily <i>Calochortus fimbriatus</i>	--	--	1B.2		
Ojai fritillary <i>Fritillaria ojaiensis</i>	--	--	1B.2		
Mesa horkelia <i>Horkelia cuneata</i> var. <i>puberula</i>	--	--	1B.1		
Black-flowered figwort <i>Scrophularia atrata</i>	--	--	1B.2		
Sources: California Department of Fish and Wildlife, California Natural Diversity Database; US Fish and Wildlife					

Table 17 -- Special-Status Species With The Potential To Occur In The Solvang Area					
Species	Listing			Landscape Cover Group	Potential Habitat Within the Plan Area
	Federal	State	CDFW or CNPS		
<p>Service</p> <p>E: Endangered FSS: USDA Forest Service Sensitive Species T: Threatened SSC: CDFW species of special concern CNPS Ranks:</p> <p>1A: Presumed Extirpated in California and Either Rare or Extinct Elsewhere 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere 2A: Plants Presumed Extirpated in California, But More Common Elsewhere 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere 3: Plants About Which More Information is Needed - A Review List 4: Plants of Limited Distribution - A Watch List</p> <p>Landscape Cover Groups: S: Streams and water bodies G: Grasslands W: Woodlands, including oak woodlands R: Riparian and riverine</p>					

2.6 Cultural Resources

2.6.1. Regulatory Setting

Federal Regulations

National Historic Preservation Act. The National Historic Preservation Act of 1966 established the National Register of Historic Places (NRHP) as the official federal list of cultural resources that have been nominated by State Offices for their historical significance at the local, state, or national level. Properties listed in the NRHP, or “determined eligible” for listing, must meet certain criteria for historical significance and possess integrity of form, location, and setting. Under Section 106 of the Act and its implementing regulations, federal agencies are required to consider the effects of their actions, or those they fund or permit, on properties that may be eligible for listing or that are listed in the NRHP. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, state, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and they:

- A. Are associated with events that have made a significant contribution to the broad patterns of our history;
- B. Are associated with the lives of persons significant in our past;
- C. Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances. Eligible properties must meet at least one of the criteria and exhibit integrity, measured by the degree to which the resource retains its historical properties and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of the changes to the property. Archaeological sites are evaluated under Criterion D, the potential to yield information important in prehistory or history.

The Section 106 review process involves a four-step procedure:

- Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.
- Identify historic properties by determining the scope of efforts, identifying cultural resources, and evaluating their eligibility for inclusion in the NRHP.
- Assess adverse effects by applying the criteria of adverse effect on historic properties (resources that are eligible for inclusion in the NRHP).

Secretary of the Interior’s Standards for the Treatment of Historic Properties. The Secretary of the Interior (SOI) is responsible for establishing standards for the preservation and protection of buildings and other cultural resources eligible for listing in the National Register. The 1990 document Secretary of the Interior’s Standard for the Treatment of Historic Properties outlines specific standards and guidelines for the preservation, rehabilitation, restoration, and reconstruction of historically designated structures. Preservation standards and guidelines apply

to those buildings that require ongoing maintenance to sustain its existence for historicity. Rehabilitation standards and guidelines involve the reuse of a historic structure or property while maintaining portions that maintain historic value. Restoration standards and guidelines are applicable to projects that remove portions of a building from another historic period in order to reconstruct missing features from the restoration period. Reconstruction standards and guidelines apply to new developments that replicate a historic period or setting. Each set of standards provides specific recommendations for the proper treatment of specific building materials, as well as parts of building development.

Federal Antiquities Act. Paleontological resources are classified as non-renewable scientific resources and are protected by several federal and state statutes, most notably by the 1906 Federal Antiquities Act,⁴ which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. Because the proposed project does not include any federal lands, this statutory scheme does not apply.

State Regulations

State Office of Historic Preservation. The State Office of Historic Preservation maintains the California Register of Historical Resources (CRHR), an authoritative listing of the state's significant historic resources as well as architectural, archaeological, and cultural resources. The CRHR includes properties listed in or formally determined eligible for the National Register, pursuant to Section 4851(a) of the Public Resources Code, and also lists selected California Registered Historical Landmarks. The State Office of Historic Preservation also maintains the Directory of Properties in the Historic Property Data File; however, properties on the Property Data File are not protected or regulated.

The State Office of Historic Preservation sponsors the CHRIS, a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership among the citizens of California, historic preservation professionals, 11 information centers, and various agencies. CHRIS provides an integrated database that furnishes site-specific archaeological and historical resources information on known resources and surveys to government, institutions, and individuals. CHRIS also supplies a list of qualified consultants. Information for the project area is available through CHRIS's Central Coast Information Center.

California Register of Historical Resources

The State Historical Resources Commission has designed this program for use by state and local agencies, private groups and citizens to identify, evaluate, register and protect California's historical resources. The Register is the authoritative guide to the state's significant historical and archeological resources. The California Register program encourages public recognition and protection of resources of architectural, historical, archeological and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under the California Environmental Quality Act.

To be eligible for listing in the California Register, a resource must meet at least one of the following criteria:

1. Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States
2. Associated with the lives of persons important to local, California or national history

3. Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data.

California Historical Landmarks. California Historical Landmarks are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors or the City/Town Council in whose jurisdiction it is located; be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks.

California Points of Historical Interest. California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historical resource may be designated as both a Landmark and a Point. If a Point is subsequently granted status as a Landmark, the Point designation will be retired.

Health and Safety Code. Sites that may contain human remains important to Native Americans must be identified and treated in a sensitive manner, consistent with the California Health and Safety Code and Public Resources Code as reviewed below:⁵

In the event that human remains are encountered during project development and in accordance with the Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods.

SB 18 Consultations. California Senate Bill (SB) 186 requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions in order to protect Traditional Tribal Cultural Places.⁷ Cities and counties must obtain a list of the California Native American tribes from the Native American Heritage Commission (NAHC)

whose traditional lands within the agency's jurisdiction may be affected by a proposed adoption or amendment of a general plan or specific plan. Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes of the opportunity to conduct consultations on the proposed project. Prior to the adoption or substantial amendment of the general plan or specific plan, a local government must refer the proposed project to those tribes on the Native American contact list that have traditional lands within the agency's jurisdiction.

To help local officials meet these new obligations, SB 18 requires the Governor's Office of Planning and Research (OPR) to amend its General Plan Guidelines to include advice to local government on how to consult with California Native American tribes.

Developed in consultation with the NAHC, the OPR guidelines include advice for consulting with California Native American Tribes for:8

- the preservation of, or the mitigation of impacts to, cultural places;
- procedures for identifying through the NAHC the appropriate California Native American tribes;
- procedures for continuing to protect the confidentiality of information concerning the specific identity, location, character, and use of cultural places; and
- procedures to facilitate voluntary landowner participation to preserve and protect the specific identity, location, character, and use of cultural places.
- the preservation of, or the mitigation of impacts to, cultural places;
- procedures for identifying through the NAHC the appropriate California Native American tribes;
- procedures for continuing to protect the confidentiality of information concerning the specific identity, location, character, and use of cultural places; and
- procedures to facilitate voluntary landowner participation to preserve and protect the specific identity, location character, and use of cultural places.

2.6.2. Chronological Overview of Regional Prehistory and History

The following summarizes the prehistory along the Santa Barbara Channel area, which includes the Solvang and Santa Ynez Valley.

Based on mortuary practices and the development of artifacts used in social activities, archaeologists estimate that Chumash society developed within its historic boundaries for over 7,500 years. This long period of development of the Chumash society was possible because the Santa Barbara Channel area contained a higher concentration of resources than adjacent areas, and the society occupying this area was more powerful than the surrounding societies. In addition, compared to the majority of societies which acquired their territories more recently, the length of time during which the indigenous Santa Barbara Channel society developed was relatively long. By the time the first Europeans made contact with the Chumash, the society was uniquely adapted to its environments and well organized as a result of its evolution over this long period of time.

Evidence of Earliest Occupation

Knowledge of occupations during the Pleistocene in the Santa Barbara Channel area is very limited because the size of groups was small and because charcoal, bones, and shells are not as likely to be preserved in earlier sites. The rise in sea level associated with the melting of ice at the end of the Pleistocene probably inundated or eroded away some early coastal sites. Also, it is difficult to define the earliest occupations at most early sites due to poor preservation of stratigraphic features.

The earliest date of human occupation in the general Santa Barbara Channel area has not been determined, though, based on archaeological evidence throughout North America, archaeologists believe that the area was settled prior to 11,000 years ago. The association of large fluted points in stratigraphic contexts with large Pleistocene animals at sites in the Great Plains and the Southwest indicates that the earliest populations in the western United States hunted large game animals.

Early Period

The Early Period, which dates to approximately 6,000-600 B.C., is the first period for which archaeologists have identified remains of permanent settlements with cemeteries in California. During the Early Period, the number of ornaments, charms, and other artifacts increased, indicating a growth in social complexity. Several cemetery and residential contexts have been excavated in Chumash territory that are approximately 7,000 years old.

Early mainland residential sites frequently contain large numbers of milling stones (manos and metates) that archaeologists believe were used to process small seeds. The mortar and pestle, historically used to pulp large seeds such as acorns and islay (wild cherry pits), were also present in smaller quantities during the Early Period.

Most early settlements consisted of small hamlets that were defensively situated on elevated landforms. During the Early Period, some settlements increased in size with the largest containing several hundred people. Large settlements were often less defensively situated than their smaller predecessors. Analysis of artifacts used to maintain social relationships and their distribution in mortuary contexts indicates that political power was largely dependent on the acquisition of wealth and ritual power.

Middle Period

The end of the Early Period and the beginning of the Middle Period (ca. 600 B.C.) is marked by changes in ornaments and other artifacts, as well as changes in the organization of cemeteries, which indicate the development of hereditary control of political and economic power. The presence of separate cemetery areas containing a predominance of either ritual objects or wealth objects at early Middle Period sites indicates the presence of a system of checks and balances between chiefs and priest-judge executioners.

There was a tendency over time to choose less defensive village locations as villages became integrated into larger political units, and those away from important boundaries were less often the focus of surprise attacks. Changes in warfare and settlement situations indicate that, as economic integration increased in importance, there was a corresponding increase in the importance of political integration of large areas to protect the operation of the economic system. The importance of reducing warfare to enable trade is indicated by description of Chumash traditional history recorded from Fernando Librado by John P. Harrington. The descriptions indicate that one reason for the political integration of the Lulapin Province (central Chumash) was to reduce warfare which adversely affected trading.

Late Period

After ca. A.D. 1000, there was a rapid growth of systems which culminated in the highly developed economic system observed by the Spanish explorers. After the 1542 Cabrillo voyage, many small Chumash settlements were abandoned and some of the largest historic towns were founded. This change in population distribution can be attributed to growth in importance of trade centers and the development of more integrated political confederations, which were necessary to encourage trade. Their economic system enabled the Chumash to make efficient use of the wide diversity of environments present within their territory.

It appears that most Chumash religious ceremonies had their roots in the Early Period when objects similar to those used historically were regularly placed in mortuary associations and owned by religious leaders.

Ethnographic Overview

At the time of historic contact, the Alisos Canyon area was occupied by the Ynezeño branch of the Chumash, who were a Hokan speaking people. Chumash people occupied an area that extended south along the California coast from San Luis Obispo County into Los Angeles County, and east to the fringes of the San Joaquin Valley, and included the Channel Islands of San Miguel, Santa Rosa, Santa Cruz and Anacapa. The Ynezeño Chumash were subdivided from their culturally similar neighbors to the north and south, the Obispeño and Barbareño Chumash, on the basis of linguistic dialects (noted by the early Spanish missionaries of the area) rather than on any apparent difference in social or economic organization. The Ynezeño (so named because of their association with Mission Santa Ynez) spoke one of four Chumashan dialects considered as forming a core group of more closely related forms. Chumash society developed over the course of some 9,000 years and has been described as having achieved a level of social, political, and economic complexity not ordinarily associated with hunting and gathering groups. Traditionally, the Chumash were noted by the Spanish for their large domed houses, wood and stone craftsmanship, basketry, and foremost for the plank canoe (tomol). Ethnographic information on Chumash culture is most extensive for the coastal populations, and the culture and society have been well documented for groups such as the Barbareño and Ventureño Chumash. Much of what is known of the Ynezeño has been provided by the journals of early Spanish expeditions and by accounts of Chumash informants.

Politically, there were at least six ethnographically known Chumash provinces. The following are the provinces from north to south and their corresponding capitals, respectively: (1) Gaviota (capital at Shisholop or Upop), (2) Dos Pueblos (capital at Mikiw), (3) Santa Barbara (capital at Synhten), (4) Ventura (capital at Shishopop), (5) Mugu (capital at Muwu or Simomo), and (6) Malibu (capital at Humaliwu). In addition, there were apparently two religious federations, Muwu and Upop.

The Ynezeño, like their neighbors, exploited a wide variety of marine and terrestrial resources within an ecosystem similar to that of their neighbors. The predominant food resources for groups living in the inland valleys and foothills included acorns, sage, yucca, and deer.

Historical Overview

The introduction of the Spanish mission system into Ynezño territory brought about dramatic changes in the aboriginal way of life. Between the time of the establishment of the Mission Santa Ynez and that of Mexican independence, and the secularization of mission lands (1834), ancient lifeways gradually began to disappear. Villages were abandoned, hunting and gathering activities were disrupted as newly introduced agricultural practices altered the landscape, and large portions of the native population had been assimilated into the missions, died of introduced disease, or fled to other areas. This cultural decimation continued and perhaps was amplified during the post mission or Mexican period, until their near cultural extinction in the later Anglo (American) period. Chumash culture has been documented by John P. Harrington and C. Hart Merriam, and well summarized by Blackburn, Hudson, and others.

Establishment of the Missions Santa Ynez and La Purisima, and the town of Santa Barbara brought the first permanent European settlement into the area. Mission development initiated agricultural operations into the Santa Barbara area and introduced various European crops and animals. After secularization of mission lands in 1834, former church lands became open to settlement. Potentially important early historic period sites include structures and features associated with the establishment of the mission and ranch operations.

In 1846, United States forces occupied California, and in 1848, the U.S. formally gained control with the signing of the Treaty of Guadalupe Hidalgo. By 1850, the population, accelerated by the Gold Rush, had increased enough to justify admission to the Union. Following the brief mining frenzy, the economic focus began to shift from cattle ranching to farming, and between 1860 and 1900, farming became the major industry of the area. Completion of the Southern Pacific Railroad line through the area in the 1880s accelerated growth by making access easier for immigrants. Potentially important sites from the American Period could include locations or structures from the early farming era (1850–1940s) and other structures from the early twentieth century associated with significant events, persons, or early industry.

2.6.3. Archaeological Resources In and Around Solvang

As discussed above, the area in and around Solvang has a rich history of native and non-native settlement. Due to the extent of Native American settlement, archaeological resources are found over a wide area, particularly in those locations where permanent water supplies were available. These resources range from limited activity sites such as resource extraction camps, rock shelters with dwellings, burial grounds, and ceremonial structures. Previous archaeological surveys conducted in the area, and in particular in the vicinity of Mission San Ines, along Alamo Pintado Creek, Alisal Creek and the Santa Ynez River have revealed significant pre-historic resources. Other important finds include portions of the Mission aqueduct system and the "Mission corral".

Based on the pattern and extent of pre-historic and historic settlement patterns, development within the City's Plan Area could reveal previously undiscovered archaeological and/or historic resources. The areas with the highest likelihood to contain such resources are considered "areas of high sensitivity" and are generally associated with the banks and terraces overlooking the Santa Ynez River, Alisal Creek, Alamo Pintado Creek and Adobe Canyon Creek (Figure 27).

Historic Resources

There are more than a dozen buildings and landmarks in and around Solvang that reflect various periods of Solvang's rich heritage as the site of an early California Mission, late nineteenth century American settlement and early twentieth century Danish settlement.

To a great extent, the Danish American period in Solvang was an expression of events and family traditions which began in Denmark. Danish migration to the United States prior to 1870 was a highly individualistic affair, and the motivating forces were largely religious and political persecution in the homeland. Danish migration was mostly to Minnesota, Wisconsin and Iowa; however, at the Danish Lutheran Church Convention it was announced that a new Danish colony would be established on the west coast. On January 23, 1911, final papers were signed to purchase 9,000 acres in the Santa Ynez Valley, and included land from what is now Alisal Road on the east to Santa Rosa Ranchero on the west.

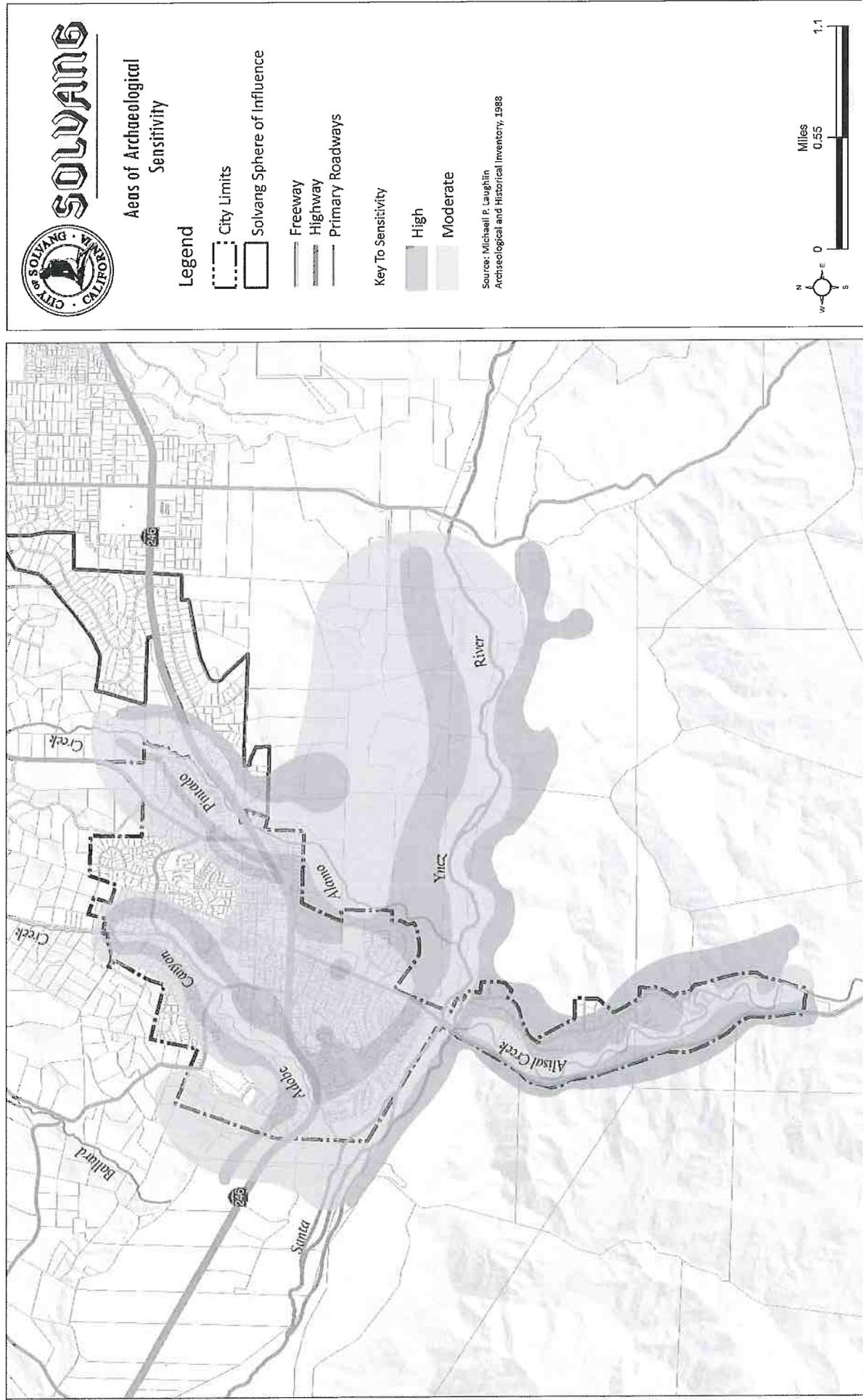
Greatly influencing present day Solvang's street and parcel layout was the first division of land for the town in 1911. Up until the end of World War II, Solvang looked like any other rural town. At the end of World War II, the Saturday Evening Post ran an article on Solvang prompting the curious to visit. Ferd Sorensen, known as the "father" of Solvang's Danish architecture, constructed the first Danish style buildings on Copenhagen Drive (then Main St.), and transformed the California Mission style archways of Rasmussen's into a Danish colonnade. In 1945, he built an authentic Danish provincial home and windmill on Old Mill Road. Solvang's present downtown consists of row-type structures with Danish facades. Around the town, numerous subdivisions and other structures have emerged since World War II to provide housing and services to Solvang's local residents.

Some historic structures in Solvang such as Mission Santa Ines, are of statewide significance, while other resources, such as the large concrete "milk bottle " remaining from the Burchardi Dairy and the Easter cross on Alisal Heights, have more local significance. Figure 28 shows seventeen important historic buildings still remaining in the Solvang area.

Paleontological Resources

A search of the collections curated by the University of California Museum of Paleontology indicated that there are no known resources of paleontological significance in the City's Plan Area or in the vicinity.

Figure 27 -- Areas of Archeological Sensitivity



Figure

28

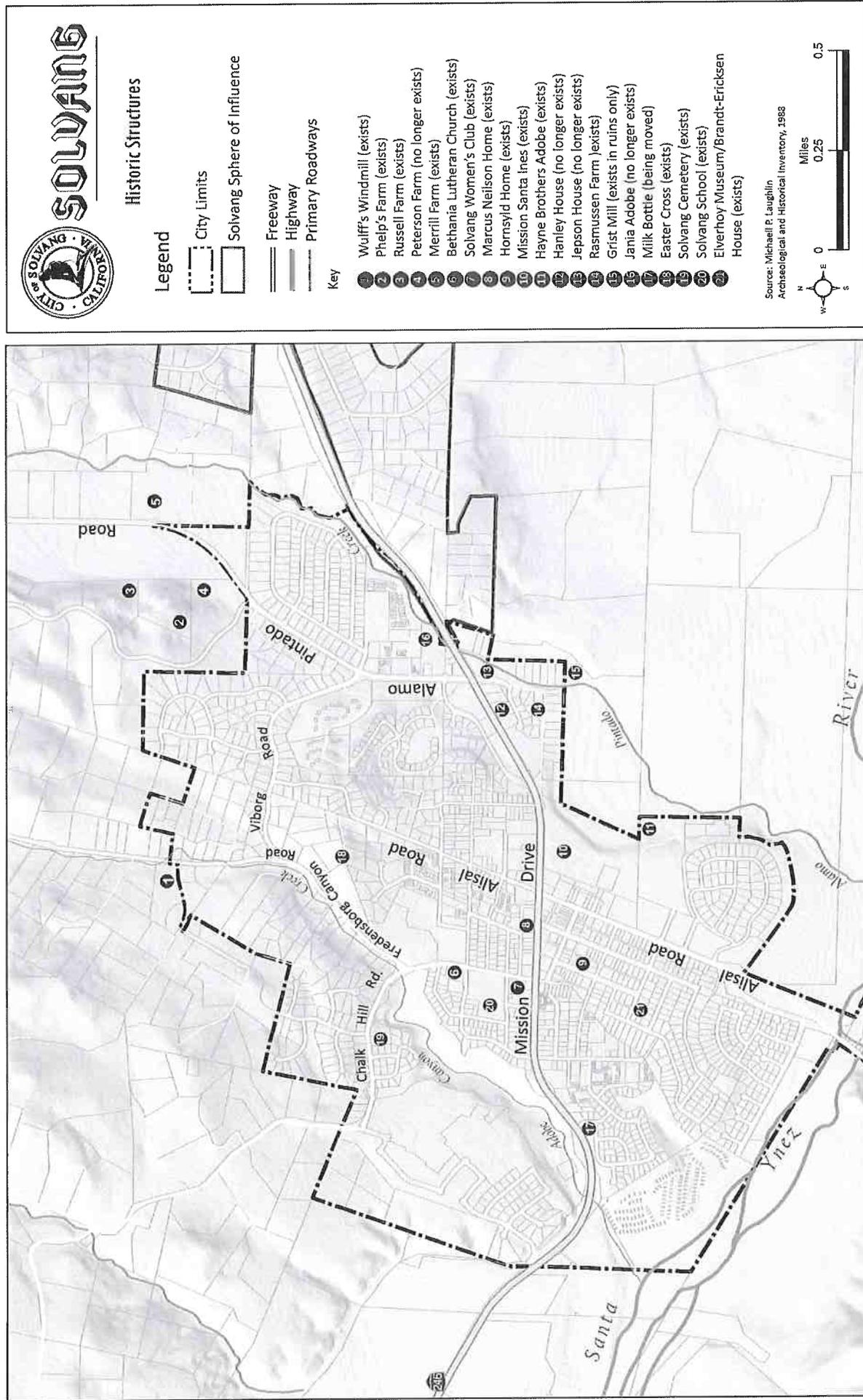
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Important

Local

Historical

Sites



2.7 Air Resources

2.7.1. Important Terms Used In this Section

Ambient Air Quality Standards. These standards measure outdoor air quality. They identify the maximum acceptable average concentrations of air pollutants during a specified period of time. These standards have been adopted at both State and Federal levels.

Mobile Source. A moving source of air pollution such as on road or off road vehicles, boats, airplanes, lawn equipment, and small equipment engines.

Nitrogen Oxides (NO_x). NO_x are composed of nitric oxide (NO), nitrogen dioxide (NO₂) and other oxides of nitrogen. NO_x are primarily created from the combustion process and are a major contributor to smog and acid rain formation.

Ozone Precursors. There are several chemical steps in creating ozone. Ozone precursors are chemicals that lead to the eventual creation of ozone. Ozone precursors occur either naturally, or as a result of human activities such as the use of combustion engines. Ozone is a pungent, colorless, toxic gas created in the atmosphere rather than emitted directly into the air. Ozone is produced in complex atmospheric reactions involving oxides of nitrogen and reactive organic gases, acting with ultraviolet energy from the sun in a photochemical reaction.

PM₁₀. Dust and other particulates exhibit a range of particle sizes. Federal and State air quality regulations reflect the fact that smaller particles are easier to inhale and can be more damaging to health. PM₁₀ refers to dust and particulates that are 10 microns in diameter or smaller.

PM_{2.5}. PM_{2.5} refers to dust and particulates that are 2.5 microns in diameter or smaller.

Reactive Organic Gases (ROG). ROG are photochemically reactive and are composed of nonmethane hydrocarbons. These gases contribute to the formation of smog.

South Central Coast Air Basin (SCCAB). An air basin is a geographic area that exhibits similar meteorological and geographic conditions. California is divided into 15 air basins to assist the statewide regional management of air quality issues. The SCCAB includes Ventura, Santa Barbara and San Luis Obispo Counties.

Sensitive Receptors. Populations or uses that are more susceptible to the effects of air pollution than the general population, such as long term health care facilities, rehabilitation centers, retirement homes, convalescent homes, residences, schools, childcare centers, and playgrounds.

Stationary Source. A nonmobile source of air pollution such as a power plant, refinery, distribution center, chrome plating facility, dry cleaner, port, rail yard, or manufacturing facility.

2.7.2. Regulatory Setting

Overview of Air Pollution Control

Air pollution control is administered on three governmental levels in Santa Barbara County. The United States Environmental Protection Agency (EPA) has jurisdiction under the Federal Clean Air Act to develop Federal air quality standards and require individual states to prepare State Implementation Plans (SIPs) to attain these standards. The California Environmental Protection Agency, Air Resources Board (CARB) has jurisdiction under the California Health and Safety Code and the California Clean Air Act to develop California air quality standards, to require regional plans to attain these standards, and to coordinate the preparation by local air districts of plans required by both the Federal and State Clean Air Acts. The CARB is also responsible for the development of state emission standards for mobile and stationary emission sources.

The Santa Barbara County Air Pollution Control District (SBC APCD) shares responsibility with the CARB for ensuring that all State and Federal ambient air quality standards are attained within the county. The SBC APCD has jurisdiction under the California Health and Safety Code to develop emission standards (rules) for the county, issue air pollution permits, and require emission controls for stationary sources in the county. The SBC APCD is also responsible for the attainment of State and Federal air quality standards (discussed below).

Air Pollutants and Air Quality Standards

Air pollution is hazardous to human health, diminishes the production and quality of many agricultural crops, reduces visibility, degrades soils materials, and damages native vegetation. State and national ambient air quality standards were created to protect the public health and welfare, and to minimize the other effects mentioned above. The standards address pollutants in the ambient air—the air that people breathe outside of buildings, as they go about their daily activities.

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are standards that define the upper limits for ambient airborne concentrations of pollutants. The standards are designed to protect all aspects of the public health and welfare, with a reasonable margin of safety. The NAAQS and CAAQS are established for “criteria pollutants” which are described below. Table 18 provides a summary of State and Federal Ambient Air Quality Standards.

Ozone. Ozone is a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe); it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROGs), including volatile organic compounds (VOCs), and nitrogen oxides (NO_x), are monitored and regulated because they are precursors to ozone formation. Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue.

Particulate Matter (PM₁₀ and PM_{2.5}). Particulate matter is comprised of various small particles including acids, organic chemicals, metals and dust. Of primary concern are particles that are 10 micrometers in diameter or smaller (PM₁₀) and particles that are 2.5 micrometers in diameter or smaller (PM_{2.5}). State and federal standards have been set

for PM₁₀, which includes all particles 10 microns (Φ) or less in diameter. Particulate matter in this size range can be inhaled deeply into the respiratory tract and lungs, posing a significant health threat. In July, 1997, the federal EPA added new standards for PM_{2.5}, particulate matter with sizes of 2.5 Φ or less in diameter. In this size range, all particles which enter the lungs remain lodged there, causing a greater threat to respiratory illness and contributing to premature death. State and federal air quality standards for PM₁₀ are set for both a 24-hour and an annual average period.

Sulfur Dioxide. The main source of SO_x emissions is the burning of sulfur containing fuels. When SO₂ (or particulate matter on which SO₂ is adsorbed) contacts moist respiratory surfaces, an acid is formed, causing the body to react in a way that interferes with normal breathing. In contrast to the regional nature of ozone and PM₁₀, higher SO₂ levels are usually very localized and source-specific.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is one of a group of highly reactive gasses known as oxides of nitrogen (NO_x). Other oxides of nitrogen include nitrous acid and nitric acid. NO₂ forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone and fine particle pollution, NO₂ is linked with a number of adverse effects on the respiratory system, due to its propensity to inflame moist respiratory surfaces. Ambient standards have been set at the state and national levels for one of the gaseous oxides of nitrogen, nitrogen dioxide (NO₂).

Carbon Monoxide. Carbon monoxide (CO) is a colorless, odorless gas resulting from the incomplete combustion of carbon-containing fuels, and is emitted by a wide variety of combustion sources; major sources include motor vehicles and waste burning. Carbon monoxide interferes with the ability of blood to carry oxygen to the body's tissues. Short-term exposure to CO at concentrations above the health standards can cause impairment of the central nervous system and other disorders. Exposure to concentrations substantially above established standards can be fatal. Carbon monoxide concentrations at these very high levels are not normally found in the outdoor environment.

Naturally Occurring Asbestos. Naturally occurring asbestos (NOA) can take the form of long, thin, separable fibers which can be broken down into microscopic particles and suspended in the air through natural weathering or human disturbance. There is no health threat if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function.

Naturally Occurring Asbestos has been identified as a toxic air contaminant by the CARB. Under the CARB *Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations*, prior to any grading activities, a geologic evaluation should be conducted to determine if NOA is present within the area that will be disturbed. If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD.

Table 18 -- State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹	Federal Standards ²
Ozone (O ₃)	1 Hour	0.09 ppm	0.12 ppm
	8 Hour		0.08 ppm
Respirable Particulate Matter (PM ₁₀)	Annual Geometric Mean	30 µg/m ³	150 µg/m ³
	24 Hour	50 µg/m ³	50 µg/m ³
	Annual Arithmetic Mean		65 µg/m ³
Fine Particulate Matter (PM _{2.5})	24 Hour		15 µg/m ³
	Annual Arithmetic Mean		
Carbon Monoxide (CO)	8 Hour	9.0 ppm	9 ppm
	1 Hour	20 ppm	35 ppm
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean		0.053 ppm
	1 Hour	0.25 ppm	
Lead	30 day average	1.5 µg/m ³	
	Calendar Quarter		1.5 µg/m ³
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean		0.03 ppm
	24 Hour	0.04 ppm	0.14 ppm
	3 Hour		0.5 ppm (secondary)
	1 Hour	0.25 ppm	
Visibility Reducing Particulates	8 Hour (10 AM to 6PM, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer-visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	
Sulfates	24 Hour	25 µg/m ³	
Hydrogen Sulfide	1 Hour	0.03 ppm	

Source: California Air Resources Board, Environmental Protection Agency

Notes:

- CARB, 2014
- Environmental Protection Agency; <http://epa.gov/air/criteria.html>

Sensitive Receptors. Sensitive receptors are people or other organisms that may have a significantly increased sensitivity or exposure to air pollution by virtue of their age and health (e.g. schools, day care centers, hospitals, nursing homes), regulatory status (e.g. federal or state listing as a sensitive or endangered species), or proximity to the source. Sensitive receptors within the City's Plan Area include residences, a hospital, senior housing and schools.

Federal Regulations

The Clean Air Act/U.S. Environmental Protection Agency. The United States Environmental Protection Agency (EPA) is responsible for enforcing the Federal Clean Air Act (CAA) and the 1990 amendments to it, and the national ambient air quality standards (federal standards) that the EPA establishes. These standards identify levels of air quality for six “criteria” pollutants, which are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The EPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and sources that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking.

Federal Hazardous Air Pollutant Program. Title III of the CAA requires EPA to adopt National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP may differ for major sources than for area sources of HAPs--major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources.

The CAA required EPA to adopt vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde.

State and Local Regulations

California Clean Air Act/California Air Resources Board. The CARB oversees air quality planning and control throughout California (Section 5.3.5). It is primarily responsible for ensuring implementation of the 1989 amendments to the California Clean Air Act (CCAA), responding to the federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the State. The CARB has established emission standards for vehicles sold in California and for various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish ambient air quality standards for the State (state standards) and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same six criteria pollutants as the Federal CAA, and also include sulfate, visibility, hydrogen sulfide, and vinyl chloride. They are more stringent than the federal standards and, in the case of PM₁₀ and SO₂, far more stringent.

The Clean Air Plan adopted by the SBC APCD which governs air quality within the county is based on the air quality standards mandated by the CCAA .

Tanner Air Toxics Act. California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure involving research, public participation, and scientific peer review for CARB to designate substances as TACs. To date, CARB has identified more than 21 TACs and has adopted EPA’s list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs.

Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no

safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The implementation of management actions that result in the use of diesel engines, such as construction equipment, may be subject to the BACT requirements for toxic air contaminants.

CARB Air Quality and Land Use Handbook. As part of its Community Health Program, CARB has developed an Air Quality and Land Use Handbook, which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects subject to the land use decision-making process. The CARB is also developing related information and technical evaluation tools for addressing cumulative air pollution impacts. Any recommendations or considerations contained in the handbook are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts.

Santa Barbara County Air Pollution Control District 2010 Clean Air Plan. As part of the California Clean Air Act, the SBC APCD is required to develop a plan to achieve and maintain the state ozone standard by the earliest practicable date. The Clean Air Plan (CAP) outlines the SBC APCD's strategies to reduce ozone precursor emissions from a wide variety of stationary and mobile sources. The CAP was adopted by the Air Pollution Control Board at their hearing in March, 2013.

The CAP for Santa Barbara County addresses the attainment and maintenance of state and federal ambient air quality standards. State standards for ozone and fine particulate matter (PM₁₀) are currently exceeded within the county, and violation of federal standards may occur in future years without adequate planning and air quality management. The CAP includes a climate protection chapter, with an inventory of carbon dioxide (CO₂) emissions in the county. CO₂ is the most prevalent greenhouse gas, and the one for which the District has the most accurate data. This chapter is informational, and not regulatory. However, Environmental Review Guidelines for the SB APCD (revised April 30, 2015) indicate *"a proposed stationary source project will not have significant GHG impact, if operation of the project will emit less than the screening significance level of 10,000 metric tons per year (MT/yr) CO₂e."*

The stringency of the emission controls required to attain the ozone standard is based on the severity of the nonattainment problem. The CCAA classifies nonattainment areas as moderate, serious, severe or extreme depending on the concentration and frequency of ozone measurements exceeding the state standard. Santa Barbara County is designated a moderate nonattainment area for ozone.

2.7.3. Air Quality in the Solvang Area

The City of Solvang is part of the South Central Coast Air Basin (SCCAB) which includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The climate of northern Santa Barbara County and all of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the semi-permanent high pressure cell in the northeastern Pacific. With a Mediterranean-type climate, the City is characterized by warm, dry summers and cool winters with occasional rainy periods. Maximum summer temperatures in the county average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the 90's. Average minimum winter temperatures range from the low 30's along the coast to the low 20's inland.

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high pressure system and other global patterns, topographical factors, and circulation patterns resulting from temperature differences between the land and the sea. The region is also subject to seasonal "Santa Ana" winds. These are typically hot, dry northerly winds which blow offshore at 15-20 mph, but can reach speeds over 60 mph. Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion is a regional effect created by the Pacific high in which air is heated as it is compressed when it flows from the high pressure area to the low pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet and can occur throughout the year, but it is most evident during the summer months. Surface inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. Both types of inversions limit the dispersal of air pollutants within the regional airshed, with the more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion.

Current Ambient Air Quality

The APCD is required to monitor air pollutant levels to assure that the air quality standards are met, and if they are not met, to also develop strategies to meet the standards. Table 19 provides a summary of annual air quality data for ozone and PM10 for the monitoring stations closest to Solvang. As shown in Table 19, 8-hour ozone levels and PM10 levels have exceeded the State standard each year. Data for PM10 from 2013 are not yet available.

Table 19 -- Ambient Air Quality Data For Ozone and Fine Particulate Matter			
Pollutant	2012	2013	2014
8 Hour Ozone (ppm), Worst Hour (Santa Ynez Airport Road)			
Number of days of State exceedances (>0.09 ppm)	5	3	4
Particulate Matter <10 microns, µg/m3 Worst 24 Hours (Lompoc South H Street)			
Number of samples of State exceedances (>50 µg/m3)	3.1	ND	2.0
Number of samples of Federal exceedances (>150 µg/m3)	0.0		0.0
<p>ND = No Data</p> <p>Source: California Air Resources Board, Annual Air Quality Data Summaries, 2016. http://www.arb.ca.gov/adam/index.html</p> <p>Data were used from one monitoring station in Santa Ynez and two monitoring stations in Gaviota. When available, data from the Airport Road station in Santa Ynez, approximately four miles east of the site, was used. When data was not available from the Santa Ynez station, data from the Lompoc South H Street station, located approximately 19 miles west of the site, and the Gaviota –GTC Site B station, located approximately eight miles south of the site, was used. Hydrogen sulfide data was taken from the Gaviota-west odor station, located approximately 14 miles south of the site.</p>			

Attainment Status of Santa Barbara County

According to the 2013 CAP, air quality in the county, measured by the number of days exceeding the State 1-hour and 8-hour ozone standards, has improved steadily since the first clean air plan was adopted in 1988. As a result, Santa Barbara County is in attainment of all applicable federal air quality standards and has attained the State 1-hour ozone standard. However, the county remains in non-attainment of the 8-hour State ozone standard. Accordingly, the emission reduction strategies of the 2013 CAP are aimed primarily at reducing ozone precursors as a means to achieve the 8-hour standard. The main sources of ozone precursors in the county are marine shipping, on-road motor vehicles, and other mobile sources, followed by stationary sources such as oil and gas production, coatings and solvents and area-wide sources which include consumer products, pesticides and farming waste.

2.8 Climate Change

The earth's natural warming process is known as the "greenhouse effect." Certain atmospheric gases act as an insulating blanket that traps solar energy to keep the global average temperature in a suitable range. These gases are called GHGs because they trap heat like the glass walls of a greenhouse. The greenhouse effect raises the temperature of the earth's surface by about sixty degrees Fahrenheit. With the natural greenhouse effect, the average temperature of the earth is about 45 degrees Fahrenheit; without it, the average temperature of the earth plummets to approximately minus 15 degrees Fahrenheit (Pew Center 2009). It is normal for the earth's temperature to fluctuate over extended periods of time. Over the past one hundred years the earth's average global temperature has generally increased by one degree Fahrenheit. In some regions of the world, the increase has been as much as four degrees Fahrenheit (Brohan 2006).

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect (PEW Center 2009). While the increase in temperature is known as "global warming," the resulting change in weather patterns is known as "global climate change." Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature.

According to overwhelming scientific consensus, climate change is a global problem (IPCC 2007). GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TAC), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is currently (2010) emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO₂ emissions remains stored in the atmosphere (Seinfeld and Pandis 1998).

Local governments such as the City of Solvang will play a role in achieving the emission reduction goals mandated in AB 32 and SB 375. The ability to influence land use decisions, provide services to the population (e.g., recycling service, waste management, and waste water treatment), and provide public education and incentives (e.g., energy conservation, agricultural practices) to citizens are options for local governments to reduce GHG emissions generated within their jurisdictions. As discussed above, for SB 375, CARB will assign each MPO a GHG emissions reduction target for passenger cars and light trucks.

2.8.1. Important Terms Used In this Section

California Climate Action Registry (CCAR). The California Climate Action Registry is a nonprofit voluntary registry for sources and producers of greenhouse gas (GHG) emissions.

Carbon dioxide (CO₂). Carbon Dioxide is an odorless and colorless greenhouse gas. Outdoor levels of CO₂ are not high enough to result in negative health effects. CO₂ is emitted from natural sources (the decomposition of dead organic matter; respiration of bacteria, plants,

animals, and fungus; evaporation from oceans; and volcanic out-gassing) and man-made sources (the burning of coal, oil, natural gas, and wood).

Carbon dioxide equivalent (CO₂e). A distinct measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the functionally equivalent amount or concentration of CO₂ as the reference.

Carbon Sequestration. Carbon storage (sequestration) occurs in forests and soils, primarily through the natural process of photosynthesis. Atmospheric carbon dioxide is taken up through leaves and becomes carbon in the woody biomass of trees and other vegetation.

Greenhouse Effect. The earth's natural warming process is known as the "greenhouse effect." Certain atmospheric gases that trap heat in the atmosphere, causing the greenhouse effect, are referred to as greenhouse gases (GHGs).

Greenhouse Gases (GHG). Gases that contribute to the greenhouse effect. Some GHGs such as carbon dioxide occur naturally, and are emitted to the atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities include: water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), Chlorofluorocarbons (CFCs), and fluorinated gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)).

Greenhouse Gas (GHG) Inventory. A greenhouse gas (GHG) inventory is an accounting of the amount of greenhouse gases emitted to or removed from the atmosphere over a specific period of time (e.g., one year) for a specified area. Inventories may be global or local. A GHG inventory also provides information on the activities that cause emissions and removals, as well as background on the methods used to make the calculations. Policy makers use GHG inventories to track emission trends, develop strategies and policies, and assess progress in controlling GHG emissions.

Intergovernmental Panel on Climate Change (IPCC). The IPCC assesses the scientific, technical, and socio-economic information relevant for the understanding of the risk of human-induced climate change.

Local Governments for Sustainability (ICLEI). ICLEI, now called ICLEI-Local Governments for Sustainability, is an international association of local governments, as well as national and regional local government organizations, that have made a commitment to sustainable development.

Methane (CH₄). CH₄ is highly flammable GHG, and may form explosive mixtures with air. Methane has both natural sources (such as in swamplands) and anthropogenic sources (such as growing rice, raising cattle, using natural gas, mining coal, fossil-fuel combustion, and biomass burning).

Nitrous oxide (N₂O). N₂O, also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is considered harmless in small doses, but heavy exposure can cause brain damage.

Teragram (Tg). A teragram is equal to one trillion grams, or one billion kilograms.

Tonne. Also known as a “metric ton” (MT), a measurement equal to 1,000,000 grams (or 1,000 kilograms). One tonne converts to 2,204.62 pounds. By comparison, the standard ton used in the United States (a short ton) is equal to 2,000 pounds.

Water vapor (H₂O). Water vapor (H₂O) is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life.

2.8.2. Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

The Federal government continues to actively develop a climate change program to reduce GHGs. The April 2, 2007, U.S. Supreme Court ruling that carbon dioxide (CO₂) is an air pollutant as defined under the Clean Air Act (CAA), and that EPA has the authority to regulate emissions of GHGs (*Massachusetts v. U.S. Environmental Protection Agency* [2007] 549 U.S. 05-1120) propels the development of new rules and regulations.

The American Clean Energy and Security Act (H.R. 2454). On May 21, 2009, the House of Representatives Energy and Commerce Committee approved H.R. 2454, “The American Clean Energy and Security Act.” Also known as the Waxman-Markley comprehensive energy bill, this legislation amends the Public Utility Regulatory Policies Act of 1978 to establish a combined efficiency and renewable electricity standard that requires utilities to supply an increasing percentage of their demand from a combination of energy efficiency savings and renewable energy (6 percent in 2012, 9.5 percent in 2014, 13 percent in 2016, 16.5 percent in 2018, and 20 percent in 2021-2039). H.R. 2425 includes a cap and-trade global warming reduction plan designed to reduce economy-wide GHG emissions 17 percent by 2020. Other provisions include: studies and incentives regarding new carbon capture and sequestration technologies; energy efficiency incentives for homes and buildings; and grants for green jobs.

Greenhouse Gas Reduction Initiatives. According to the U.S. Environmental Protection Agency (EPA), the United States government is using voluntary and incentive-based programs to reduce emissions, and has established programs to promote climate technology and science. This strategy has been developed to incorporate expertise from Federal agencies and the private sector. EPA’s comprehensive policy to address climate change includes: energy efficiency, renewable energy, methane and other non-carbon dioxide (non-CO₂) gases, agricultural practices, and implementation of technologies to achieve GHG reductions. EPA administers multiple programs that encourage voluntary GHG reductions, including: Clean Energy-Environment State Partnership, Climate Leaders, Combined Heat and Power Partnership, ENERGY STAR, AgSTAR, EPA Office of Transportation and Air Quality Voluntary Programs, Green Power Partnership, High GWP Gas Voluntary Programs, Methane Voluntary Programs, and WasteWise (EPA 2009).

State Plans, Policies, Regulations and Laws

Senate Bill 1771 (2000)–California Climate Action Registry (CCAR). Senate Bill (SB) 1771 (Chapter 1018, Statutes of 2000) established CCAR in 2000. In 2001, SB 527 (Chapter 769, Statutes of 2001) modified the CCAR as a nonprofit voluntary registry for GHG emissions. (SB

1771 enacted Sections 42800–42870 of the California Health and Safety Code and Public Resources Code Section 25730; SB 527 amended Sections 42810, 42821–42824, 42840–42843, 42860, and 42870 of the Health and Safety Code.) The purpose of the CCAR is to help companies and organizations with operations in the State establish GHG emissions baselines against which future GHG emissions reduction requirements may be applied. The CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

Assembly Bill 1493 (2002). In 2002, then-Governor Gray Davis signed AB 1493 (Statutes 2002, Chapter 200; amending Health & Safety Code, Section 42823 and adding Health & Safety Code, Section 43018.5). AB 1493 requires that CARB develop and adopt, by January 1, 2005, regulations that achieve the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation.

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR Section 1900, 1961), and adoption of Section 1961.1 (13 CCR Section 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds (lb) that is designed primarily for the transportation of persons), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016.

Senate Bill 1078 (2002). SB 1078 addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. SB 107 changed the target date to 2010.

Senate Bill 107 (2006). SB 107 (Chapter 464, Statutes of 2006) requires investor-owned utilities in the State, such as Pacific Gas and Electric Company (PG&E), to increase their total procurement of eligible renewable energy resources by at least an additional one percent of retail sales per year so that 20 percent of retail electricity sales come from renewable-energy sources by December 31, 2010. Previously, State law required achievement of this 20 percent requirement by 2017.

Assembly Bill 32 (2006), the California Global Warming Solutions Act of 2006. In September 2006, Governor Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, enacting the California Health and Safety Code Sections 38500–38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. The goal of the legislation is to reduce California's GHG emissions to 2000 levels by 2010 and to 1990 levels by 2020. Executive Order S-3-05 (detailed below) creates a long-range goal of reducing GHG emissions to 80 percent below 1990 levels by 2050.

Reducing GHG emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from 2002-2004 levels. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from

stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles.

As required under AB 32, CARB approved the 1990 GHG emissions inventory on December 6, 2007, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 million tonnes carbon dioxide equivalent (MMT CO₂e). The inventory revealed that in 1990, transportation, with 35 percent of the State's total emissions, was the largest single sector, followed by industrial emissions (24 percent); imported electricity (14 percent); in-state electricity generation (11 percent); residential use (7 percent); agriculture (5 percent); and commercial uses (3 percent).

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of greenhouse gases for large facilities on December 6, 2007. All industrial facilities emitting over 25,000 tonnes of carbon dioxide equivalent (MT CO₂e) and any power generation facilities greater than or equal to one MW will be required to report their GHG emission to CARB, the lead air pollution control agency for the State. The largest facilities in the State account for 94 percent of GHG emissions from industrial and commercial stationary sources in California.

Senate Bill 1368 (2006). SB 1368 (Chapter 598, Statutes of 2006) is the companion bill to AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emissions standard for base-load generation from investor-owned utilities by February 1, 2007. Similarly, the California Energy Commission (CEC) was tasked with establishing a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the emission rate from a base-load, combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, be generated from plants that meet the standards set by CPUC and CEC. In January 2007, CPUC adopted an interim GHG Emissions Performance Standard, which requires that all new long-term commitments for base-load generation entered into by investor-owned utilities have emissions no greater than a combined-cycle gas turbine plant (i.e., 1,100 lbs of CO₂ per megawatt-hour [MW-hour]). A "new longterm commitment" refers to new plant investments (new construction), new or renewal contracts with a term of five years or more, or major investments by the utility in its existing base-load power plants. In May 2007, CEC approved regulations that prohibit the State's publicly owned utilities from entering into long-term financial commitments with plants that exceed the standard adopted by CPUC of 1,100 lbs of CO₂ per MW-hour.

Senate Bill 97 (2007). SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under the California Environmental Quality Act (CEQA). As a directive of the bill, the Governor's Office of Planning and Research (OPR) prepared Amendments to the CEQA Guidelines for greenhouse gas emissions and transmitted them to the California Natural Resources Agency on April 13, 2009. The Natural Resources Agency adopted the CEQA Guidelines Amendments on December 30, 2009.

On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. On March 18, 2010, the Natural Resources Agency adopted the proposed CEQA Guideline amendments as proposed by OPR. The adopted CEQA Guideline amendments require lead agencies to:

- Calculate or estimate the amount of GHGs produced by a project using either a quantitative
- modeling approach or a qualitative approach that includes performance standards,
- Use one or more of several approaches to determine the significance of emissions, including:
 - the amount of the project's emissions increase over existing conditions,
 - the level of emissions compared to a significance threshold, and/or
 - whether the project complies with an existing statewide, regional, or local plan to mitigate GHG emissions.

Climate Change Scoping Plan (2008). As indicated above, AB 32 requires CARB to adopt a scoping plan showing how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. After receiving public input on its discussion draft of the Proposed Scoping Plan released in June 2008, CARB released the Climate Change Proposed Scoping Plan in October 2008, and adopted it on December 12, 2008.

The *Climate Change Scoping Plan* contains the main strategies California will implement to achieve a reduction of 169 million metric tonnes (MMT) of carbon dioxide equivalent (CO₂e) emissions, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (i.e., a reduction of 42 MMT CO₂e [10 percent from 2002-2004 average emissions]). The *Climate Change Scoping Plan* also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the State's GHG inventory. The key elements of the scoping plan to reduce California's GHG emissions to 1990 levels by 2020 include:

- Improved vehicle emission standards (reduction of 31.7 MMT CO₂e);
- Implementing low-carbon fuel standards (reduction of 15 MMT CO₂e);
- Expanding and strengthening energy efficiency measures in buildings and appliances (reduction of 26.3 MMT CO₂e);
- Expanding the renewable portfolio standard for electricity production to 33 percent (reduction of 21.3 MMT CO₂e); and
- Targeting fees to fund California's long-term commitment to AB 32 administration.

The *Climate Change Scoping Plan* also includes: establishing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system; and creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

Executive Order S-20-04 (2004). Governor Schwarzenegger signed Executive Order S-20-04, the California Green Building Initiative, on December 14, 2004, establishing the State's priority for energy and resource-efficient high-performance buildings. The executive order sets a goal of reducing energy use in State-owned and private commercial buildings by 20 percent in 2015, using nonresidential Title 20 and Title 24 standards adopted in 2003 as the baseline. The California Green Building Initiative also encourages retrofitting, construction, and operation of private commercial buildings in compliance with the Green Building Action Plan.

Executive Order S-3-05 (2005). Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, proclaims that California is vulnerable to the effects of climate change. It declares that increased temperatures could reduce the Sierra Nevada's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established targets for total GHG emissions. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and legislature describing progress made toward reaching the emission targets; effects of climate change on California's resources; and mitigation and adaptation plans to combat these effects. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CCAT), made up of members of various State agencies and commissions.

CCAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses and actions by local governments and communities, as well as through State incentive and regulatory programs.

Executive Order S-1-07 (2007). Governor Schwarzenegger signed Executive Order S-1-07, the Low Carbon Fuel Standard Program (LCFS), on January 18, 2007. It proclaims that the transportation sector is the main source of GHG emissions in California, at over 40 percent of statewide emissions. It establishes a goal that carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020. It instructed the CalEPA to coordinate activities between the University of California, the CEC, and other State agencies to develop and propose a draft compliance schedule to meet the 2020 target. Furthermore, it directed CARB to consider initiating regulatory proceedings to establish and implement the LCFS. In response, CARB identified the LCFS as an early action item pursuant to meeting the mandates in AB 32 with a regulation to be adopted and implemented by 2010.

Actions Taken by the Governor's Office of Planning and Research

In June 2008, OPR issued a Technical Advisory on CEQA and Climate Change (OPR 2008). This document recommends that for projects subject to CEQA, emissions be calculated and mitigation measures be identified to reduce those emissions. The OPR report does not identify emission thresholds for GHGs, but instead recommends that each lead agency develop its own thresholds.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for GHG emissions, as required by Senate Bill 97 (Chapter 185, 2007). These proposed CEQA Guideline amendments would provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency adopted the CEQA Guidelines Amendments on December 30, 2009, to the Office of Administrative Law. Actions Taken by the California Natural Resources Agency On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. On March 18, 2010, the Natural Resources Agency adopted the proposed CEQA Guideline amendments as proposed by OPR. The adopted CEQA Guideline amendments require lead agencies to:

- Calculate or estimate the amount of GHGs produced by a project using either a quantitative
- modeling approach or a qualitative approach that includes performance standards,
- Use one or more of several approaches to determine the significance of emissions, including:
 - the amount of the project's emissions increase over existing conditions,
 - the level of emissions compared to a significance threshold, and/or
 - whether the project complies with an existing statewide, regional, or local plan to mitigate GHG emissions.

Regional and Local Plans, Policies, Regulations, and Ordinances

Santa Barbara County Air Pollution Control District Rules and Procedures. The SBC APCD has not yet adopted any significance thresholds for GHG emissions. However, The District is pursuing the following activities relating to GHG emissions, CEQA compliance and climate change:

- The District has begun a process to update the APCD Environmental Review Guidelines to include guidance for evaluating the significance of the impacts from greenhouse gas emissions from new or modified stationary sources; And,
- The District initiated a process in 2011 to develop greenhouse gas thresholds of significance for stationary source projects; this process was not pursued.

Santa Barbara County Energy and Climate Action Plan (ECAP). In 2009, the County Board of Supervisors adopted Resolution 09-059 which adopted the County Climate Change Guiding Principles and directed staff to “take immediate, cost effective and coordinated steps to reduce the County of Santa Barbara’s collective greenhouse gas (GHG) emissions.” The Energy and Climate Action Plan is the second phase of the county’s Climate Action Strategy which seeks to reduce GHG in the county. The ECAP includes a baseline GHG emissions inventory, a forecast of emissions to both 2020 and 2035, a GHG reduction target of 15% below baseline emissions by 2020, a set of emission reduction measures (ERMs, Measures) to meet the target, and a methodology for tracking and reporting emissions in the future.

ECAP implementation will assist the state in meeting its statewide GHG reduction established by AB 32, as well as the statewide energy reduction goals in California’s Long-Term Energy Efficiency Strategic Plan. The ECAP and proposed changes to the County Comprehensive Plan’s Energy Element would commit the County to meeting a 15% reduction target including implementation of the County’s Sustainable Communities Strategy (see below). Specifically, the ECAP accomplishes the following:

- Provides a GHG emissions baseline from which to benchmark GHG emissions reductions.
- Demonstrates the County’s strategy to reduce the county’s GHG emissions by 15% from baseline emissions by 2020, consistent with the reduction target of AB 32.
- Helps to increase the community’s resilience to the effects of climate change.
- Provides a policy document with specific implementation measures to be considered as part of the planning process for future development projects.

- Provides a list of specific actions that will reduce GHG emissions, with the highest priority given to actions that provide the greatest reduction in GHG emissions and benefit the community at the least cost.
- Identifies the county's energy strategy to achieve energy efficiency goals and targets, in addition to the overall GHG emissions reductions.
- Implements programs that integrate with the State of California's long-term energy efficiency goals.
- Establishes a qualified reduction plan consistent with CEQA Guidelines Section 15183.5(b) from which future development within the unincorporated county can tier and thereby streamline the environmental analysis necessary under CEQA.

The ECAP includes a baseline GHG emissions inventory, a forecast of emissions to both 2020 and 2035, a GHG reduction target of 15% below baseline emissions by 2020, a set of ERMs to meet the target, and a methodology for tracking and reporting emissions in the future. The ECAP's jurisdiction applies to the unincorporated portions of Santa Barbara County, where the County retains land use permit authority. Similarly, the ECAP does not address incorporated areas within Santa Barbara County, which includes the City of Solvang.

Santa Barbara County Regional Transportation Plan and Sustainable Communities Strategy. SBCAG is required by federal and State law to prepare and update a regional transportation plan (RTP) every four years. The RTP is a long-range transportation plan that must plan ahead for a minimum of twenty years. SBCAG now has the responsibility to prepare a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 375 as adopted in 2008. The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce greenhouse gas (GHG) emissions from passenger vehicles and light trucks to achieve the regional GHG reduction targets set by the California Air Resources Board (ARB). The RTP and SCS applies to all areas of the county, including the City of Solvang.

The SCS ultimately consists of the preferred land use and transportation scenario selected by SBCAG as best capable of meeting the plan's five goals. The preferred scenario, which forms the basis of the Regional Transportation Plan - Sustainable Communities Strategy (RTP-SCS), encourages infill development and transportation-oriented development (TOD). This strategy selectively increases residential and commercial land use capacity within existing transit corridors in existing urban areas, shifting a greater share of future growth to these corridors.

The City, in coordination with the Santa Barbara County Association of Governments (SBCAG), will need to develop a SCS or APS to achieve the allocated reduction target.

Potential Effects of Climate Change on the City of Solvang

Climate change has the potential to affect environmental conditions in California through a variety of mechanisms. Resource areas other than air quality and atmospheric temperature could be indirectly affected by the accumulation of GHG emissions. For example, an increase in the global average temperature is expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the State. According to the CEC (2006a), the snowpack portion of the water supply could potentially decline by 30-90

percent by the end of the 21st century. A study cited in a report by the California Department of Water Resources (DWR) projects that approximately 50 percent of the statewide snowpack will be lost by the end of the century (Knowles and Cayan 2002). Although current forecasts contain varying levels of uncertainty, it is evident that this phenomenon could lead to significant challenges in securing an adequate water supply for a growing population. An increase in precipitation falling as rain rather than snow could also lead to increased potential for floods, because water that would normally be held in the Sierra Nevada snowpack until spring could flow into the Central Valley concurrently with winter storm events. This scenario would place more pressure on California's levee/flood control system (DWR 2006).

Another mechanism for indirect effects on the environment in California is sea level rise. Sea levels rose worldwide approximately seven inches during the last century (CEC 2006b), and it is predicted to rise an additional 7–22 inches by 2100, depending on the future levels of GHG emissions (IPCC 2007). However, the Governor-appointed Delta Vision Blue Ribbon Task Force has recommended that the State plan for a scenario of 16 inches of sea level rise by 2050, and 55 inches by 2100 (CARB 2008). Resultant effects of sea level rise could include increased coastal flooding, saltwater intrusion, and disruption of wetlands (CEC 2006b). Water delivery to the county from sources in the Delta could be adversely affected

As California's climate changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the State if suitable conditions are no longer available. An additional concern associated with climate change is an increased risk of wildfire caused by changes in rainfall patterns and plant communities.

Work by Snyder et al. (2002) has produced the finest-scale temperature and precipitation estimates to date. Resulting temperature increases for a scenario of doubled CO₂ concentrations are 1.4°C to 3.8°C (2.5°F to 6.8°F) throughout California. This is consistent with the global increases predicted by the IPCC (2007). In a regional model of the western United States, Kim et al. (2002) projected a climate warming of approximately 3°C to 4°C (5.4°F to 7.2°F). Of note in both studies is the projection of uneven distribution of temperature increases. For example, regional climate models show that the warming effects are greatest in the Sierra Nevada, with implications for snowpack and snowmelt (Kim et al. 2002; Snyder et al. 2002).

Rising Temperatures. Based on the results of a variety of regional climate models, it is reasonably foreseeable that some increase in annual average temperatures will occur in Santa Barbara County during the next 100 years. Although a temperature increase is expected, the amount and timing of the increase is uncertain. In general, predictions put an increase in the range of 2°C to 5°C (3.6 to 9°F) over the next 50–100 years (IPCC 2007; Kim et al. 2002; Snyder et al. 2002; Dettinger 2005).

Increasing temperatures in California would indirectly affect the county through changes in water supply, sea levels, water quality, agriculture, and energy consumption rates. Indirect effects of climate change on the physical conditions in the county are discussed later in this section. Direct effects of increased temperatures in the county would lead to an increase in aggravated health conditions for the elderly and those with respiratory disorders (Environmental Literacy Council 2008).

Precipitation. Although global climate change models generally predict an increase in overall precipitation on a worldwide scale, there is no such consistency among the results of regional models applied to California. Based on the model and input assumptions, both increases and decreases in annual precipitation are predicted. There is also variability in the results for different parts of the State. Given the uncertainty associated with projecting the amount of annual precipitation, it would be too speculative to determine the reasonably foreseeable direct effects of climate change on physical conditions, specifically precipitation volumes, in Santa Barbara County.

Based on the results of a variety of regional climate models and literature, it is reasonably foreseeable that snowpack will be reduced and/or will melt earlier or more rapidly in watersheds that feed the State Water Project. Consequently, changes in snowpack could affect the City indirectly by altering the timing and volume of runoff that feeds the State Water Project, which supplies a portion of the City's water supply. As a result, SWP deliveries may decrease over time.

Severe Storms. Although various climate change models predict some increase in variability of weather patterns and an increasing incidence of extreme weather events, there is no consistency among the model results, with some predicting increased incidents of droughts and others predicting increased frequency of severe storm events. Given the uncertainty associated with projecting the type and extent of changes in climatic variability and the speculative nature of predicting incidents of extreme weather events, the effect on the county of changing patterns of storms and other extreme weather remains unclear.

Increased risk of drought presents increased risk of wildfire hazards. However, most urbanized areas of the county are bounded by agricultural land that is actively farmed or fallow, and are not generally adjacent to any wildlands. As the county continues to grow and development encroaches further into wildland interface areas, the potential for wildland fires will increase.

Agriculture. Overall, climate change is expected to have the largest effect on southern California and on agricultural users. Most water scarcity would be felt by agricultural users in southern California. However, it is expected that southern California urban water users, especially in the Coachella Valley, would also experience some scarcity. By the year 2050, almost no urban water scarcity would exist north of the Tehachapi Mountains; however, agricultural water scarcity could increase in the Central Valley (Medellin et al. 2006; Tanaka et al. 2006; and Lund et al. 2003). To the extent that available data and projections suggest that climate change would intensify existing wet and dry patterns, resulting in more precipitation during the wet season and less during the dry season, if the appropriate infrastructure is developed to capture winter rainfall, the county could be less affected by these changes than the current agricultural water use regime. However, there is uncertainty with respect to the effects of climate change on future water availability in California, in terms of whether and where effects will occur, and the timing and severity of any such potential effect.

How climate change affects agricultural operations on private land is a matter of public concern. Climate change may reduce the suitability of lands for agricultural uses. However, while climate change effects may occur, adaptation is also expected that would allow farmers and ranchers to minimize any potential negative effect on agricultural incomes. Adoption of new cropping systems and improved irrigation techniques are expected to allow agriculture to continue in the region. Although costly to farmers, implementation of more efficient irrigation techniques and systems would reduce the amount of water required to achieve the same crop yields, which would reduce overall agricultural water demand and GHG emissions associated with water

conveyance. Other less expensive agricultural practices that may be implemented to lessen the impact of climate change include introduction of later-maturing crop varieties and species, switching crop sequences, sowing earlier, adjusting the timing of field operations, and conserving soil moisture through different tillage methods, among others. However, the extent to which these farming practices will be implemented is dependent on the individual farmers. No regulations currently (2010) exist that would require agricultural operators to implement less GHG intensive practices. Because of the significant uncertainty in projecting future conditions, it would be too speculative to determine the reasonably foreseeable direct effects of climate change on physical conditions in Solvang.

2.9 Energy and Sustainability

The energy resources assessment included in this section is based on reviews of available energy reports from the California Energy Commission (CEC), the Energy Information Administration (EIA), and California Department of Conservation from 1990 through 2009.

2.9.1. Important Terms Used In This Section

Energy Resources. Sources of electricity and natural gas. Electrical generation may come from natural gas, biomass, hydroelectric plants, solar, or wind.

Kilowatthours (kWh). A unit of measurement for electricity equal to one thousand watt hours.

2.9.2. Regulatory Setting

Federal Agencies and Regulations

Federal Energy Regulatory Commission (FERC). FERC is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines, and licenses hydropower projects. Licensing of hydroelectric under the authority of FERC includes input from State and Federal energy, environmental protection, fish and wildlife, and water quality agencies. The California Energy Commission's Systems Assessment and Facilities Siting Division provides coordination to ensure that needed energy facilities are authorized in an expeditious, safe, and environmentally-acceptable manner.

State Agencies and Regulations

California Energy Commission. CEC is California's primary energy policy and planning agency. Created by the California Legislature in 1974, CEC has five major responsibilities: 1) forecasting future energy needs and keeping historical energy data; 2) licensing thermal power plants 50 MW or larger; 3) promoting energy efficiency through appliance and building standards; 4) developing energy technologies and supporting renewable energy; and 5) planning for and directing state response to energy emergencies. Under the requirements of the California Public Resources Code, CEC, in conjunction with the California Department of Conservation Division of Oil, Gas, and Geothermal Resources is required to assess electricity and natural gas resources on an annual basis or as necessary.

Electric Utility Industry Restructuring Act of 1998 (AB 1890). Initially intended to deregulate the provision of electric utilities to encourage competition, the act primarily focused on public benefits/public goods programs. These programs fund energy efficiency programs and development of renewable resources in the form of rebates, low-income assistance, and research and development programs.

Energy Action Plan (2003). In 2003 California adopted an energy action plan that focuses on energy efficiency as the primary way in which the state would meet its future energy needs. Energy Efficiency Act of 2006 (AB 2021). This bill encourages all investor-owned and municipal utilities to aggressively invest in all achievable, cost-effective energy efficiency programs in their service territories. The results of this bill are expected to reduce forecasted electricity demand by 10 percent over ten years from 2006 through 2016, offsetting the projected need to build 11 new major power plants.

Renewables Portfolio Standard (RPS) (CA Public Utilities Code Section 399.11 et seq., and Public Resources Code Section 25740 et seq.). Effective January 1, 2003, the California Legislature mandated an increase in the percentage of renewable retail electricity sales by publicly regulated electrical utilities by at least one percent per year, to reach at least 20 percent by the end of 2010 and 33 percent by the end of 2020.

Collectively, California's three largest service providers served 12.7 percent of their 2007 retail electricity sales with renewable power, with PG&E delivering 11.4 percent renewable electricity sales, Southern California Edison delivering 15.7 percent renewable electricity sales, and San Diego Gas and Electric delivering 5.2 percent renewable electricity sales.

Executive Order S-06-06. This Executive Order calls out the benefits and potential of bioenergy in helping meet the future needs of the State for clean, renewable power, fuels, and hydrogen. By 2010 it calls for the production of 20 percent of biofuels in California, an increase of this amount to 40 percent by 2020, and to 75 percent by 2050. It also aims to produce 20 percent of the renewable electricity generated from biomass resources within the state by 2010. This bioenergy action plan is tasked by the CEC through the California Biomass Collaborative to prepare a roadmap for biomass research and development.

Executive Order S-14-08. This Executive Order established the goal of reaching 33 percent of renewable retail electricity sales by publicly related electrical utilities by 2020. It was signed to streamline the renewable energy project approval process and to increase the State's Renewable Portfolio Standard. In other words, it increases the development of renewable electricity sources, energy efficiency, and demand response needed to increase the state's renewable portfolio and meet GHG emission reduction goals by 2050.

Executive Order S-21-09. Executive Order S-21-09 increases California's Renewable Portfolio Standard (RPS) to 33 percent by 2020, which was first established by EO S-14-08. It allows the Air Resources Board (ARB) and other agencies such as the Public Utilities Commission (PUC) and California Energy Commission to ensure that regulations are adopted that consider approaches that achieve AB 32 and S-14-08. Senate Bill 375 (2008). SB 375, signed into law on September 30, 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation in an effort to reduce energy consumption. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). CARB, in consultation with MPOs, will

provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

2.9.3. Energy Use

Despite historically high gas prices, concerns over energy security, air quality, and climate change, energy demand continues to increase in California. Energy conservation and use of renewable energy sources are tangible steps many cities including Solvang have taken to reduce fossil fuel consumption, improve air quality, and reduce greenhouse gas emissions. Electric service in Solvang is provided by Pacific Gas & Electric Company (PG&E) which is a leader in its use of renewable, non-polluting energy sources. Therefore, the energy used by the City and its residents is on average much less polluting than an equivalent amount of energy used by a city and its residents in other regions of the country, where a greater percentage of power comes from combustion of hydrocarbons (coal, natural gas, etc.)

The overall trend in energy consumption is reflected in electricity demand countywide as reported by the California Energy Commission (Table 20). As shown in Table 20, the total consumption of electricity and natural gas in Santa Barbara County has risen steadily since 2006. Dividing the total consumption of electricity and natural gas by the county population, the per capita consumption is derived. Table 21 provides an estimate of energy consumption in Solvang by applying the per capita consumption countywide to the City's historic population. The actual demand in Solvang reflects a larger proportion associated with the non-residential sector because of the greater proportion of visitor-serving businesses and the role of tourism in the local economy. Nonetheless, the data in Table 21 provide an order of magnitude for energy consumption Solvang while illustrating the overall trend of energy use.

The City has adopted measures to encourage increased energy efficiency in new development, which is discussed below under the topic of Sustainability.

Table 20 -- Consumption of Electricity and Natural Gas in Santa Barbara County 2006 - 2012							
Electricity Consumption (Millions of Kilowatt Hours)							
Sector	2006	2007	2008	2009	2010	2011	2012
Non-Residential Sector:	2,407.02	2,360.96	2,453.62	2,408.81	2,399.71	2,428.98	2,468.12
Residential Sector:	770.62	813.52	820.66	806.82	796.90	801.07	836.42
Total:	3,177.64	3,174.49	3,274.28	3,215.64	3,196.61	3,230.05	3,304.54
Per Capita Consumption ¹ :	0.00771	0.00765	0.00783	0.00763	0.00754	0.00760	0.00775
Natural Gas Consumption (Millions of Therms)							
Non-Residential Sector:	62.91	63.76	64.57	59.05	61.12	64.63	64.57
Residential Sector:	64.51	66.99	64.58	64.06	65.88	65.89	64.58

Total:	127.42	130.76	129.15	123.11	127.01	130.51	129.15
Per Capita Consumption: ¹	0.00031	0.00032	0.00031	0.00029	0.00030	0.00031	0.00030
County Population	412,271	414,750	418,309	421,197	423,895	424,732	426,344

Source: Energy Consumption Management System, California Energy Commission, 2014
<http://www.ecdms.energy.ca.gov/>; California Department of Finance

Notes:

1. Total consumption divided by total County population reported by the California Department of Finance for the years indicated.

Table 21 -- Estimate of Total Consumption of Electricity and Natural Gas in The City of Solvang 2006 - 2012¹

Year	2006	2007	2008	2009	2010	2011	2012
Electricity ² (millions of kWh)	40.10	39.64	40.87	40.01	39.55	40.03	40.85
Natural Gas ² (millions of Therms)	1.61	1.63	1.61	1.53	1.57	1.62	1.60
City Population	5,203	5,179	5,221	5,241	5,245	5,264	5,270

Source: Energy Consumption Management System, California Energy Commission, 2014
<http://www.ecdms.energy.ca.gov/>; California Department of Finance

Notes:

1. Total consumption of electricity and natural from all sectors.
2. Total Countywide consumption divided by total county population time total City population reported by the California Department of Finance for the years indicated.

2.9.4. Sustainability

Sustainability is generally defined as the ability to meet the needs of the current generation without compromising the ability of future generations to meet their needs. In practical terms, a sustainable approach reduces resource consumption, avoids pollution, develops in harmony with the environment, and helps people live healthier lives. A sustainable approach will also help minimize the effects of climate change (discussed in Section 1.19).

The City of Solvang has incorporated elements of sustainability in a number of its codes, ordinances and practices and encourages the use of sustainable practices citywide.

Reducing Motor Vehicle Trips/Transportation Options

Solvang is small in area and conducive to the use of alternate forms of transportation, including walking and bicycling. In addition, transit service is available to City residents and visitors through Santa Ynez Transit which is a joint-powers agency funded by the Cities of Buellton and Solvang in conjunction with Santa Barbara County.

Green Buildings/Green Building Code

Green buildings are sited, designed, constructed, and operated to enhance the wellbeing of their occupants and to minimize negative impacts on the community and the natural environment. The most widely used benchmark for sustainable building in the commercial and institutional sectors is the Leadership in Energy and Environmental Design (LEED) rating system, established by the US Green Building Council. For residential construction, the commonly-accepted standard is the Green Point Rated system developed by Build it Green. Green buildings typically minimize energy and water usage, utilize recyclable materials, limit use of non-renewable resources, and minimize use of toxic materials in construction and operation.

The City adopted the statewide green building code (“CalGreen”), and also adopted “Tier 1” standards for residential development that goes above and beyond the baseline requirements.

Green Business Program of Santa Barbara County

The City participates in the Santa Barbara County Green Business program. The GBP offers incentives and assistance to encourage businesses to implement voluntary actions to protect, preserve, and improve the environment beyond what current laws require. Businesses meeting these criteria can be certified as green businesses. The Green Business Program:

- provides guidebooks, resources, and assistance to businesses wanting to be green
- certifies businesses through on-site visits and evaluation, and
- highlights certified businesses so that local consumers can shop green.

Solid Waste Reduction and Recycling

Waste reduction and recycling reduce consumption and disposal, thereby conserving natural resources and landfill capacity and avoiding production of greenhouse gases in the landfill. The City has adopted regulations to encourage recycling and prohibit the disposal of recyclable materials under Title 5, Chapter 2, Article 5-2-5 of the Solvang Municipal Code. Some of the main elements of these regulations include:

- It is unlawful for commercial businesses to dispose of cardboard in a trash receptacle;
- It is unlawful to dispose of “green waste” in a garbage or trash can.
- It is unlawful for a refuse collection franchise operating in the City to dispose of recyclable trash.

To date (August, 2014) there are three certified Green Businesses in Solvang.

Stormwater

Although stormwater runoff is part of the natural hydrologic cycle, human activities can alter natural drainage patterns, introduce pollutants, and increase erosion, thereby degrading natural habitats. Uncontrolled runoff can also cause flooding. The Federal Clean Water Act requires municipal agencies to obtain National Pollutant Discharge Elimination System (NPDES) permits to manage stormwater runoff.

In July 2013, the Central Coast Water Board adopted Order R3-2013-0032, with new, more stringent Post-Construction Requirements (PCRs). Projects that receive their first discretionary approval for design elements (for example, building footprints, drainage features) after March 6, 2014 - or if no discretionary approval is required, receive their first ministerial permit after that date - are subject to the PCRs, if they create or replace 2,500 square feet or more of impervious area.

The PCRs mandate that development projects use Low Impact Development (LID) to detain, retain, and treat runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes.

In accordance with the requirements of the Water Board, the City requires new development to incorporate appropriate Best Management Practices and LID to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as may be appropriate to minimize the generation, transport and discharge of pollutants.

Water Conservation

The City's water conservation efforts include the following:

- The Water Conservation Program (Title 9, Chapter 3, Article D of the Solvang Municipal Code) sets forth the City's regulations for the conservation of water resources. The program includes standards for water use during a drought as well as penalties for water waste. In addition to conservation, use of reclaimed water, either from treatment plants or from on-site grey water systems, can reduce the need to use fresh water for landscaping and other non-potable uses.
- The Water Division of the Public Works Department has initiated a Water Management Program. The aim of the program is to make people and businesses aware of their water use and to suggest ways to monitor and reduce the amount of water that's being wasted. Weekly tips are being offered in the Santa Ynez Valley News.
- The Public Works Department (Water Division) is implementing a new Toilet Rebate Program. As part of the City of Solvang, Water Conservation Project, City water customers may be eligible to receive a 60% rebate, up to \$120 through the City's Ultra Low Flow Toilet (ULFT) Rebate Program.
- The city is currently involved in a 'meter change-out' program. We are replacing our older meters with new ones as part of our regular maintenance program. The new meters are easier to read and enable us to accurately investigate possible water leaks in the service lines.

The City also works collaboratively with other agencies to provide water management and conservation information.

Urban Forest

A healthy urban forest contributes to a sustainable city. Trees consume carbon dioxide and absorb air and water pollutants. They also provide shade (which reduces energy consumption), absorb runoff, reduce soil erosion, provide habitat for plants and animals, and make walking more pleasant. The City has hundreds of trees in the right-of-way, street medians and parks. Trees make an important contribution to the aesthetics of the city and the character of Solvang's neighborhoods, as well as the natural environment.

2.10 Mineral Resources

Sand and Gravel

Extracted sand and gravel resources are primary construction materials used in nearly all forms of urban development, from road construction to building construction. Thus, the use of sand and gravel is directly related to urban growth rates. A major share of the cost associated with sand and gravel usage involves transportation costs. As a result, the more economically viable deposits of sand and gravel are often located in areas where pressures for urban development are greatest.

The California State Mining and Geology Board requires that mineral land classification reports for regions containing construction materials include *"An estimate of the total quantity of each such construction material that will be needed to supply the requirements of both the county and the marketing region in which it occurs for the next 50 years."* According to the 2011 Update Of Mineral Land Classification: Concrete Aggregate In The San Luis Obispo-Santa Barbara Production-Consumption Region, California, an estimated 263 million tons of aggregate will be needed to satisfy future demand in the San Luis Obispo-Santa Barbara region through the year 2060.

In 1992 the California Geological Survey (CGS) conducted a study of the Santa Ynez Valley area to identify areas with the potential for economically viable mineral resources is highest. That study concluded that one of the areas of greatest potential for sand and gravel production is along the Santa Ynez River. Accordingly, two sand and gravel operations, Buellflat Rock Company and the Mission Ready-Mix Concrete company, are situated in the Santa Ynez River flood plain west of Solvang.

Oil and Gas

There are no oil and gas fields identified within or near the city of Solvang. The nearest oil extraction occurs at the Zaca Oil Field located approximately eight miles to the north of the city. The field is known to contain heavy crude oil and an exploration company has recently discovered a lower sub-thrust block in the field, which was not previously produced by the field's historical operators. Oil is also extracted at the Barham Ranch Oil Field located approximately eight and one-half miles to the northwest of Solvang.

Diatomaceous Earth

Diatomite deposits are found in several locations within or near the city. Also known as diatomaceous earth, such deposits consist of the remains of microscopic plants of marine origin known as diatoms. Diatomite deposits are loosely packed to form a light, highly porous, and permeable rock. The primary uses of diatomite are filtering media, insulation material, fine abrasives, and absorbents. Diatomite deposits are located northwest of Solvang's city limits in the Chalk Hill area, in Solvang's Alisal Heights and Mission Oaks neighborhoods, and just east of the city in the vicinity of Highway 246 and Alamo Pintado Creek. According to the California Geological Survey, these deposits are composed largely of impure, coarsely stratified and

massive diatomite, and are of little or no commercial value. Thus, there are no diatomite mining activities currently underway in the Solvang area.

2.11 Findings

- The City relies on a variety of sources for its water supply which helps ensure its long-term reliability. In addition, the City has undertaken a comprehensive investigation of the long-term reliability of its water sources and is pursuing a range of feasible options. The One or more of these options will provide sufficient water supplies to meet the City's water demand through buildout of the General Plan.
- The present water storage volume in the Solvang water system of approximately 1.2 million gallons is inadequate by approximately 300,000 gallons. Additional storage will be needed to ensure sufficient water supplies during peak demand.
- The City has adopted a comprehensive program for water management and conservation.
- Although much of the land within the City's Plan Area is developed with urban land uses, the City possesses considerable park and open space land.
- The natural and built environments in and around Solvang contain scenic qualities that contribute to the rural character and desirability of the area. Views of the City, and from the City are rich and varied.
- Certain soils surrounding the City are considered Prime agricultural soils by the US Natural Resource Conservation Service. Productive agricultural lands around the City and in the Santa Ynez Valley are an essential component of the local and regional economies. These lands also provide an important scenic and open space resource for Solvang residents.
- Although the City's Plan Area is largely built out, there remains important sensitive habitat within the City limits along the Santa Ynez River, Adobe Canyon Creek, Alamo Pintado Creek and Alisal Creek. Portions of this habitat may be suitable for a number of special status species that are resident or temporary residents of the area.
- The area in and around Solvang is rich with archaeological resources. New development may reveal important previously undiscovered resources.
- Solvang is also rich in history. The Mission Santa Ines is an historical resource of statewide importance. Many of the important buildings of the City's Danish settlement era remain and are an important component of the City's history and character.
- Air quality in the Santa Ynez Valley overall is good; however, the county still does not meet the State 8-hour ozone standard. The main sources of air pollution remain on-road motor vehicles. Solvang does not possess any major stationary sources of air pollution.
- Solvang, along with all of California, will be subjected to a range of impacts associated with climate change. The precise type magnitude of these impacts cannot be known with certainty. However, opportunities exist for the City to participate in regional efforts to reduce the emission of greenhouse gases.

- Energy use in Santa Barbara County has risen slowly over the past eight years, consistent with the State as a whole. Owing to the number of businesses in Solvang serving the tourism industry, the City's per capita consumption of electricity and natural gas are likely somewhat higher than the county.
- Solvang has adopted a number of plans and regulations to improve the long-term sustainability of the City's resources, including the Green Building Code and other measures to minimize energy consumption in new development; regulations that address solid waste recycling; mandatory low impact storm drainage design; water conservation; and the planting of street trees.
- The area along the Santa Ynez River in the Solvang area is an important source of sand and gravel.
- There are no oil and natural gas fields in the Solvang area; diatomite is found in several locations in the area, it is not considered to be of commercial value.

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**PLANNING COMMISSION
RESOLUTION NO. 16-02**

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF SOLVANG, RECOMMENDING THAT THE CITY COUNCIL ADOPT AN AMENDMENT TO THE GENERAL PLAN CONSISTING OF AN UPDATED CONSERVATION/OPEN SPACE AND SAFETY ELEMENTS AND ADOPTION OF A MITIGATED NEGATIVE DECLARATION PURSUANT TO THE STATE GUIDELINES FOR THE IMPLEMENTATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA).

THE PLANNING COMMISSION OF THE CITY OF SOLVANG HEREBY RESOLVES AS FOLLOWS:

WHEREAS, California Government Code Section 65300 requires that each City and County adopt and periodically update a comprehensive General Plan. The current General Plan Conservation/Open Space and Safety Elements for the City of Solvang were originally adopted in 1988, and have not undergone a comprehensive review since the City's incorporation;

WHEREAS, the Planning Commission has held duly noticed Public Hearing on the subject Conservation/Open Space and Safety Elements Updates of the City's General Plan on May 2, 2016, at which time all interested persons were given the opportunity to be heard;

WHEREAS, the Planning Commission has reviewed this project in compliance with the California Environmental Quality Act (CEQA) and finds the Mitigated Negative Declaration, subject to the Mitigation Measures to be an adequate environmental review document for the project; and

THEREFORE, BE IT RESOLVED, that the Planning Commission of the City of Solvang hereby recommends to the City Council adoption of the updated Conservation/Open Space and Safety Elements of the General Plan.

On motion by Commissioner _____ and seconded by Commissioner _____, the foregoing Resolution is hereby adopted by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

PASSED, APPROVED AND ADOPTED, this 2nd day of May, 2016.

APPROVED AS TO CONTENT:

APPROVED:

Arleen T. Pelster
Planning & Economic Development Director

Robert Clarke
Planning Commission Chair

Initial Study of Environmental Impact

I. ENVIRONMENTAL DETERMINATION FORM

1. Project Title:

City of Solvang General Plan Update – Conservation/Open Space & Safety Elements

2. Lead Agency Name and Address:

City of Solvang
Planning & Community Development Department
411 Second Street
Solvang CA, 93464-0107

3. Contact Person and Phone Number:

David Foote, c/o *firma*, (805) 781-9800

4. Project Location:

The project includes the area within the City of Solvang city limits and Sphere of Influence. See **Map 1 City Limits and Sphere Of Influence** for project boundaries.

5. Project Sponsor's Name and Address:

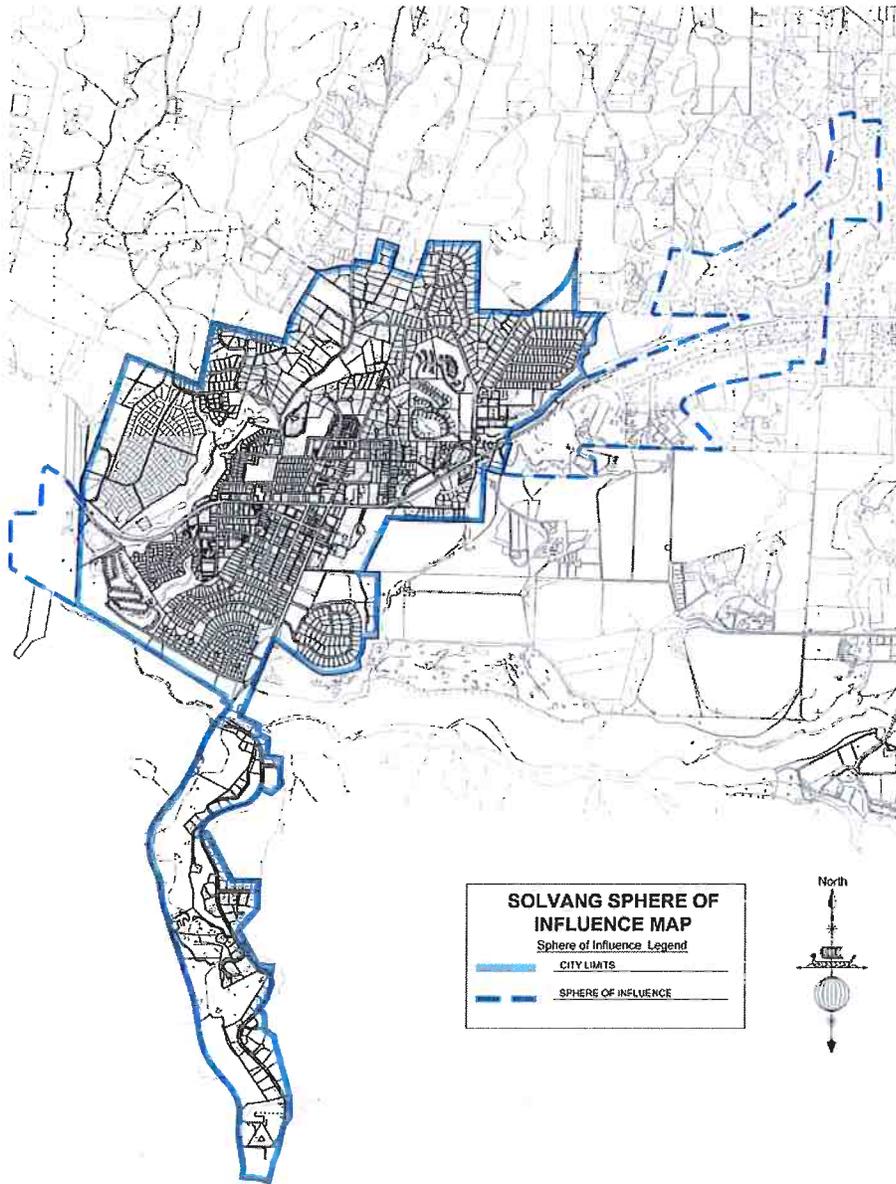
City of Solvang
Planning & Community Development Department
411 Second Street
Solvang CA, 93464-0107

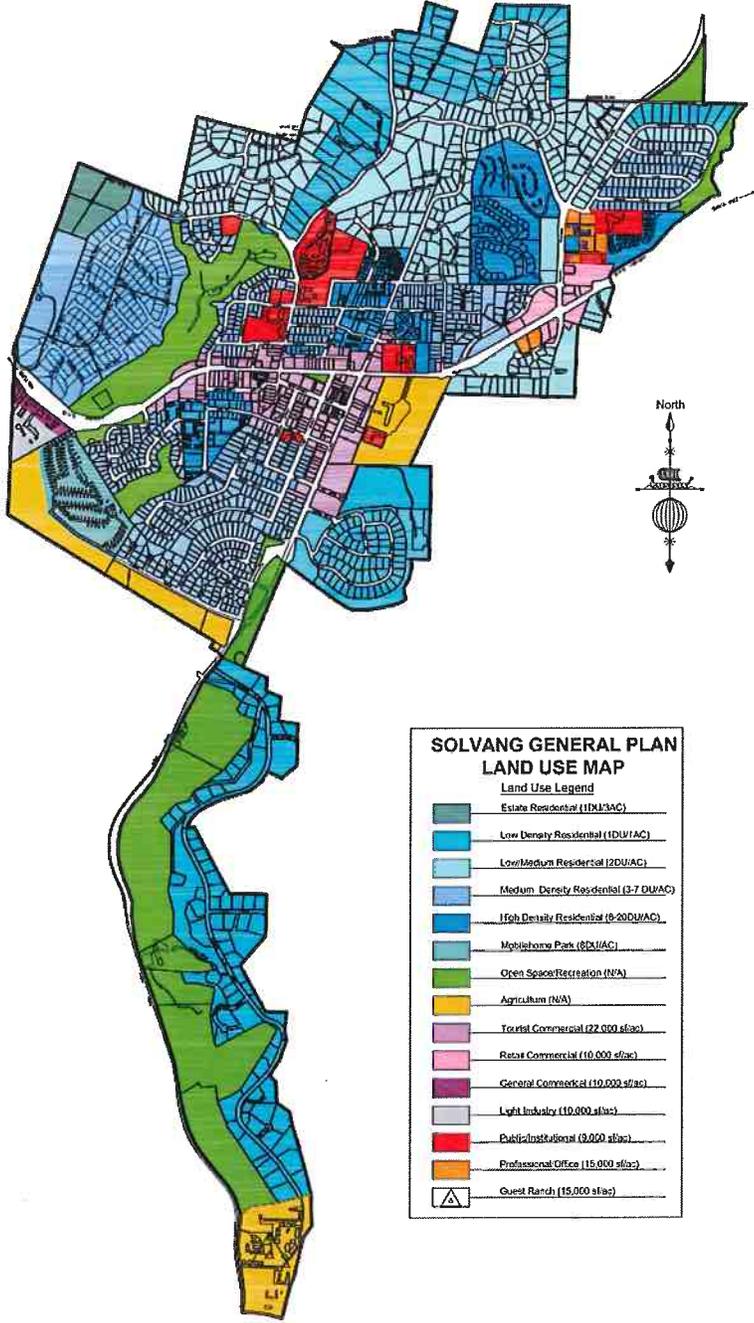
6. General Plan Designation:

See **Map 2 Land Use Map** for General Plan Designations.

7. Zoning:

See **Map 3 Zoning Map** for zones.



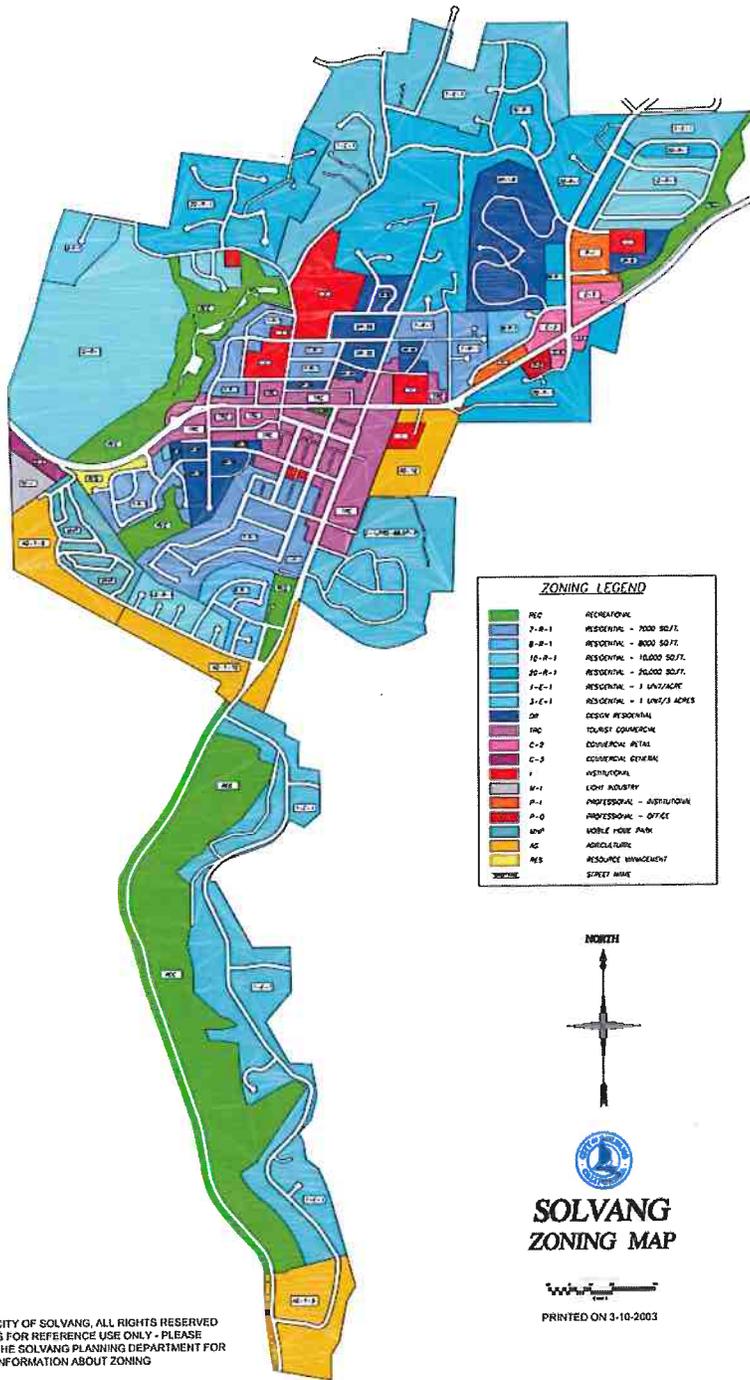


**SOLVANG GENERAL PLAN
LAND USE MAP**

Land Use Legend

	Estate Residential (1DM/3AC)
	Low Density Residential (1DU/1AC)
	Low/Medium Residential (2DU/AC)
	Medium Density Residential (3-7 DU/AC)
	High Density Residential (8-20 DU/AC)
	Myrtleburg Park (8DU/AC)
	Open Space/Recreation (N/A)
	Agriculture (N/A)
	Tourist Commercial (22,000 sf/ac)
	Retail Commercial (10,000 sf/ac)
	General Commercial (10,000 sf/ac)
	Light Industry (10,000 sf/ac)
	Public/Institutional (3,000 sf/ac)
	Professional Office (15,000 sf/ac)
	Guest Ranch (15,000 sf/ac)

Map 3 - Zoning Map



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 CONTACT THE SOLVANG PLANNING DEPARTMENT FOR
 DETAILED INFORMATION ABOUT ZONING

NORTH

**SOLVANG
 ZONING MAP**

PRINTED ON 3-10-2003

8. Description of the Project:

The City of Solvang proposes to update the combined Conservation/ Open Space Element and Safety Element of the General Plan. The changes include updating the Conservation/Open Space Element and Safety Element (COSSE) to promote a balanced management of natural, historical and cultural resources and to help minimize the risk to life and property from natural and human-caused hazards within the City's Plan Area (Map 1). These elements are intended to have a beneficial impact on the environment with respect to the protection of sensitive resources and the protection of life and property.

Specific resources addressed in the combined Conservation/Open Space Element include, but are not limited to, the following: water resources, biological resources, cultural and historical resources, air quality and climate change, sustainability and climate change, mineral resources, open space and scenic resources. The updated Conservation/ Open Space Element applies a sustainable approach to the management of resources, with an overarching theme to meet the needs of the current generation without compromising the ability of future generations to meet their needs.

The updated Safety Element provides policy guidance to address what would generally be regarded as unacceptable and avoidable risks associated with natural and human-caused hazards. Various topics addressed in the Safety Element include, but are not limited to, the following: seismically induced conditions including ground shaking, surface rupture, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other geologic hazards; flooding; wild land and urban fires; evacuation routes, hazardous materials, airport safety, disease vectors and pesticides.

Updated Goals, Policies, and Action Items reflect the current residents' desires for their city. The proposed Elements are consistent with the other General Plan Elements. Although the Conservation/Open Space Element and Safety Element do not propose activities (i.e. action items) that would directly result in adverse environmental impacts, action items will be subject to separate, project-specific CEQA compliance at the time they are needed.

The following is a summary of the key Policies of the Conservation/ Open Space Element that would directly or indirectly affect the physical environmental and human health which is the focus of CEQA. These policies serve as a program-level framework to identify potential impacts to resources and guide mitigation measures to reduce or avoid impacts resulting from individual development of public works projects in the City under the General Plan:

Policy 2.1, The City shall promote the protection of surface and groundwater water resources within the local watershed and the Santa Ynez River.

Policy 2.2 The City shall continue to use groundwater as a source of domestic water for the city. The City shall also pursue, as expeditiously as possible, a water supply program consisting of the development of multiple sources of water, water conservation and groundwater management to accommodate projected water demand and provide for water supply security.

Policy 3.1, The City shall promote the protection of sensitive natural resources, wildlife communities and habitats.

Policy 4.1, The City shall provide for the protection of both known and potential archaeological resources. To avoid significant damage to important archaeological sites, all available measures shall be explored at the time of a development proposal. Where such measures are not feasible and development would adversely affect identified archaeological or paleontological resources, mitigation shall be required in accordance with the relevant provisions of federal and State laws.

Policy 4.2, The City shall set as a high priority the protection and enhancement of Solvang's historically and architecturally significant sites and buildings.

Policy 5.1, The City will cooperate with the efforts of the Santa Barbara County Air Pollution Control District (APCD) to reduce the emission of air pollutants and their precursors.

Policy 5.2, The City shall undertake efforts to reduce the air quality impacts associated with fossil fuel-based motor vehicle use.

Policy 5.3, The City shall work to reduce the air quality impacts of motor vehicle use by reducing traffic congestion and by promoting efforts to reduce fossil fuel-based motor vehicle use.

Policy 5.4, The City shall, to the extent practicable, separate sensitive land uses from significant sources of air pollutants or odor emissions. Sensitive land uses include, but are not limited to, those that support people or other organisms that may have a significantly increased sensitivity or exposure to air pollution by virtue of their age and health (e.g. schools, day care centers, hospitals, nursing homes), status (e.g. sensitive or endangered species), or proximity to the source.

Policy 5.6, The City shall work with the Santa Barbara County Air Pollution Control District, Santa Barbara County Association of Governments and Santa Barbara County to comply with statewide greenhouse gas reduction goals as established in AB 32, SB 375 and subsequent Executive Orders and legislation.

Policy 6.1, The City shall promote the use of sustainable practices by the City, other public agencies, and the public.

Policy 6.2, The City shall promote the efficient use of fuels used for transportation.

Policy 6.3, The City shall work with energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.

Policy 6.4, The City shall encourage the use of sustainable, energy efficient construction techniques.

Policy 7.1, The City shall require the reclamation of past mineral extraction sites within the City's Plan Area and shall encourage other agencies in the area to do the same.

Policy 7.2, On sites with mineral-extraction potential, the City will: Prohibit mineral extraction and surface entry for extraction of oil or gas within open space owned by the City in fee or as an easement. Encourage other agencies with jurisdiction to permit mineral extraction only if significant impacts to human health and the environment will be avoided and site restoration will be assured. Impacts to be addressed include air and water quality, noise, habitat disruption, aesthetics and geologic stability. All phases of the activity, including site access, must be

Policy 8.1, The City shall work to establish and maintain open space lands for the benefit of Solvang residents and visitors.

Policy 8.2, The City shall protect and enhance the important scenic qualities of the City's Plan Area.

The following is a summary of Policies of the Safety Element:

Policy 2.1 The City shall support the response programs that provide emergency and other services to the public when a disaster occurs. The focus of response activities is saving lives, preventing injury and reducing immediate property damage.

Policy 2.2 The City shall continue to improve preparedness programs that educate and organize people to respond appropriately to disasters.

Policy 2.3 The City shall work to improve coordination among City, County and State programs, and among others working to reduce the risks of disasters.

Policy 2.4 The City shall establish and maintain a database of safety related information.

Policy 3.1 The City shall require earthquake resistant designs for all structures and utilities and especially critical structures such as hospitals, police substations, fire stations, emergency communication centers, private schools, high occupancy buildings and bridges.

Policy 3.2 The City shall locate new development away from active and potentially active faults to reduce damage from fault rupture. Fault studies may need to include mapping and exploration beyond project limits to provide a relatively accurate assessment of a fault's activity.

Policy 3.3 The City shall require design professionals to evaluate the potential for liquefaction or seismic settlement to impact structures in accordance with the currently adopted California Building Code.

Policy 3.4 The City will avoid development in areas of known slope instability or high landslide risk when possible, and continue to encourage that developments on sloping ground use design and construction techniques appropriate for those areas.

Policy 4.2 The City shall endeavor to reduce flood damage in areas known to be prone to flooding.

Policy 4.3 The City shall endeavor to minimize the risk of dam failure.

Policy 5.1 New development, and especially new development on the City's urban/wildland interface, shall be designed to protect life and property from the effects of wildfires and structural fires.

Policy 5.2 The City shall work with Santa Barbara County to maintain fire department staffing levels and response times consistent with National Fire Protection Association standards.

Policy 5.3 The City shall work to improve structures and other values at risk to reduce the impact of fire.

Policy 6.1 The City shall require proper storage and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous sub-stances, especially at the time of disposal.

Policy 7.1 The City shall work to reduce the potential for disaster associated with airport operations.

Policy 7.2 The City shall work to maintain a high level public safety in Solvang.

Policy 7.3 The City shall work to reduce the potential for pesticide exposure and the spread of disease to humans and the environment.

Policy 7.4 The City will work to minimize danger to people and property from trees that are weakened and susceptible to falling or limb loss during storms.

9. Availability of Documents

The Draft Conservation and Open Space and Safety Elements are attached to this Initial Study. The Draft Update of the Elements along with supporting Technical Appendices are also available for review at the City of Solvang Planning and Economic Development Department.

10. Environmental Setting

The City of Solvang is located in the Santa Ynez Valley in the central part of Santa Barbara County. It is generally surrounded by the Purisima Hills to the north, the upper Santa Ynez Valley to the east, the Santa Ynez Mountains to the south, and the lower Santa Ynez Valley to the west. Solvang is situated primarily along an alluvial plain formed by the Santa Ynez River and on the southeastern edge of the Purisima Hills.

11. Surrounding Land Uses:

Existing land use in the area surrounding the City consists primarily of open space, agricultural and ranch uses. This area includes the undeveloped areas of the Purisima Hills, agricultural land uses, the Santa Ynez River, and the Santa Ynez Mountains flanking the southern portion of the City.

12. Other Public Agencies Whose Approval is Required: (None)

13. Environmental Factors Potentially Adversely Affected: None

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Public Services
<input type="checkbox"/>	Agriculture Resources	<input type="checkbox"/>	Hydrology and Water Quality	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Air Quality	<input type="checkbox"/>	Land Use and Planning	<input type="checkbox"/>	Transportation and Traffic
<input type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Utilities and Service Systems
<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Noise	<input type="checkbox"/>	Mandatory Findings of Significance
<input type="checkbox"/>	Geology and Soils	<input type="checkbox"/>	Population and Housing		

- There is no evidence before the Department that the project will have any potential adverse effects on fish and wildlife resources or the habitat upon which the wildlife depends.
- The project has potential to impact fish and wildlife resources and shall be subject to the payment of Fish and Game fees pursuant to Section 711.4 of the California Fish and Game Code.

14. Determination:

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project applicant in the form of a MITIGATED NEGATIVE DECLARATION.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a potentially significant impact or potentially significant unless mitigated impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature
March 7, 2016

David Foote ASLA, Firma Consultants

For: The City of Solvang
Arleen T. Pelster AICP, Planning & Economic Development
Director

II. ENVIRONMENTAL CHECKLIST

GENERAL: The Conservation and Open Space Element is intended, and expected, to have a beneficial impact on the environment by, among other things, promoting the protection of sensitive resources within and surrounding the city and by enhancing the quality and character of new development. Likewise, the Safety Element is intended and expected to have a beneficial effect on the level of protection of life and property.

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	1			X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	1			X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	1			X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	1			X

Impact Discussion:

a-d) The Proposed Project would not create any visual impact related to implementation of the Elements. No installation of visual features is proposed under any program or action item, therefore no visual impact is anticipated. Activities undertaken to implement the action will be subject to separate project specific CEQA review.

The following list includes applicable policies and action items included in the Conservation/Open Space element that will serve to preserve visual resources:

Policy 8.2, Action Item (A) Continue to apply the policies and action items of the City's General Plan Community Design Element relating to the protection of visual resources.

Policy 8.2, Action Item (B): Require new development to comply with Chapter 11-4-3 of the City's Zoning Regulations regarding the protection of visual resources. Require development on hillsides to:

- *Keep a low profile and conform to the natural slopes;*
- *Avoid large, continuous walls or roof surfaces, or prominent foundation walls, poles, or columns;*
- *Minimize grading of roads;*
- *Minimize grading on individual lots; generally, locate houses close to the street;*
- *Minimize the grading of visible driveways;*

- Include planting which is compatible with native hillside vegetation and which provides a visual transition from developed to open areas;
- Use materials, colors, and textures which blend with the natural landscape and avoid high contrasts;
- Minimize exterior lighting.

Policy 8.2, Action Item (C): Assess and mitigate the impacts of new development on scenic resources through compliance with the California Environmental Quality Act (CEQA).

Policy 8.2, Action Item (F) Support efforts by Santa Barbara County to protect the scenic qualities of transportation corridors serving the City and region.

2. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X

Impact Discussion:

- a-c) No land use changes are proposed for agricultural land. None of the goals of the COSSE propose development of agricultural land, therefore no impact of Agricultural Resources is anticipated.

The Conservation/Open Space Element includes policies and action items that will serve to protect agricultural resources including prime agricultural soils and economically viable farmland:

Policy 8.1, Action Item (A) Apply the Open Space/Recreation and/or Agriculture land use designations to properties that support sensitive resources.

Policy 8.1, Action Item (G) Encourage Santa Barbara County to retain the Agriculture designation on lands surrounding the City's Plan area. Support strategies adopted by the County aimed at maintaining agricultural lands in viable farming units in areas not designated for urban development.

3. **AIR QUALITY.** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- d) Expose sensitive receptors to substantial pollutant concentrations?
- e) Create objectionable odors affecting a substantial number of people?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1, 2				X
1, 2				X
1, 2				X
1, 2				X
1, 2				X

Impact Discussion:

a-e) Implementation of the Proposed Project would not have a significant impact on Air Quality. The updated Conservation/Open Space Element Goals, Policies, and Action Items promote improved air quality and serve as program-level mitigation measures, they are listed below:

Goals, Policies, and Action Items from the Conservation/Open Space Element:

Policy 5.1, Action Item (A) Continue to review development projects using criteria established by the SBC APCD in order to minimize future increases in vehicle travel and to assist in implementing appropriate indirect source regulations. This policy will help reduce potential air impacts from future development projects.

Policy 5.1, Action Item (B) Work with the SBC APCD to ensure the earliest practicable attainment and subsequent maintenance of federal and state ambient air quality standards. This policy promotes improved Air Quality.

Policy 5.1, Action Item (C) Continue to use the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of new development. The CEQA process shall be used to ensure early consultation with the SBC APCD concerning air quality issues associated with specific development proposals.

Policy 5.1, Action Item (D) Ensure all air quality mitigation measures are feasible, implementable, and cost effective.

Policy 5.1, Action Item (E) Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SBC APCD, project applicants, and other interested parties.

Policy 5.1, Action Item (F) Ensure that all transportation improvement projects submitted for inclusion in regional transportation plans (RTP) shall be consistent with the air quality goals and policies of the General Plan. This policy will help reduce potential air impacts from future development projects.

Policy 5.1, Action Item (G) Coordinate¹ with transit providers to determine project impacts on long range transit plans and ensure that impacts are mitigated.

Policy 5.1, Action Item (H) Work with the Housing Authority, transit providers, and developers to encourage the construction of low income housing developments that use transit-oriented and pedestrian-oriented design principles.

Policy 5.1, Action Item (I) Work with Caltrans and the Regional Transportation Planning Agency to minimize the air quality, mobility, and social impacts of large scale transportation projects on existing neighborhoods.

Policy 5.1, Action Item (J) Support the efforts of local public and private groups that provide air quality education programs.

Policy 5.1, Action Item (K) Work with the SBC APCD to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

Policy 5.2, Action Item (A) Promote the implementation of innovative employer-based trip reduction programs for employees.

Policy 5.2, Action Item (B) Consider replacing or converting conventional fuel City vehicles to clean fuel vehicles as rapidly as feasible.

Policy 5.2, Action Item (C) Support the use of teleconferencing in lieu of employee travel to conferences and meetings when feasible.

Policy 5.2, Action Item (D) Promote the expansion of employment opportunities in Solvang to reduce the volume and distance of home-to-work commute trips by motor vehicle. This policy will help improve air quality by reducing the distance of vehicle trips

Policy 5.2, Action Item (E) Encourage the installation of solar photovoltaic systems and electric vehicle charging facilities in commercial, residential and industrial development. This policy will help improve air quality by decreasing the number of vehicle trips.

Policy 5.3, Action Item (A) Work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives. This policy will help reduce the number of vehicle trips and potential impacts to air quality.

Policy 5.3, Action Item (B) Work with the SBCAG to plan park and ride lots at suitable locations serving long distance and local commuters. This policy will help reduce the number of vehicle trips and potential impacts to air quality.

Policy 6.1, Action Item (C) Continue to promote patterns of development that provide a complimentary range of land uses to serve the daily needs of nearby residents and minimize dependence on the automobile.

¹ See glossary for definition.

Policy 6.2, Action Item (A) Encourage residents to drive electric, hybrid, or other fuel-efficient vehicles for personal transportation by marketing state and federal tax incentives on the City website. This policy will help reduce impacts to air quality.

Policy 6.2, Action Item (B) Work toward establishing a minimum of 35 miles per gallon (mpg) fuel efficiency for the City vehicle fleet. This policy will help reduce impacts to air quality.

Policy 6.2, Action Item (C) Work toward converting 100% of non-emergency City vehicles to electric, hybrid, flex-fuel, or alternative fuels. In addition, the City shall encourage the Parks & Recreation and Public Works Departments to replace gas-powered mowers and other equipment with electric or hybrid models and to use biodiesel fuel (produced from waste oil) for diesel vehicles where possible.

Policy 6.3, Action Item (B) Continue to implement the Green Building Code. This policy will help reduce emissions related to energy consumption.

Policy 6.4, Action Item (G) Promote and encourage co-generation projects for commercial and industrial facilities, provided they meet all applicable air quality standards and provide a net reduction in GHG emissions associated with energy production. This policy will help reduce the number of vehicle trips and potential impacts to air quality.

Policy 6.4, Action Item (H) Consider the installation of renewable energy systems at City facilities where feasible, including solar collection systems at municipal properties and waste-to-energy (methane recovery) systems at the waste water treatment plant.

4. BIOLOGICAL RESOURCES. Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1,6				X
1,6				X

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	1,6				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	1,6				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	1				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	1				X

Impact Discussion:

The proposed Conservation/Open Space Element update contains policies and programs that protect biological resources and promote the protection of sensitive natural resource, wildlife communities and habitats. The update of the Safety element would not adversely impact Biological Resources. In addition to Safety Element policies that promote fire safety and fire protection around the city that will help minimize the loss of natural habitat, the following Action Items specifically promote the preservation and protection of Biological resources:

Goals, Policies, and Action Items from the Conservation/Open Space Element:

Policy 3.1, Action Item (A) Encourage and support educational programs that enhance public appreciation and awareness of the natural environment, and programs on how to manage development to preserve native wildlife populations.

Policy 3.1, Action Item (B) Require new development to provide evidence of compliance with the relevant provisions of state and federal laws relating to the preservation of rare, threatened, or endangered species and their habitat prior to project approval and/or prior to construction as determined by the requirements set forth in the federal and state Endangered Species Acts, the federal Clean Water Act, and the federal Rivers and Harbors Act.

Policy 3.1, Action Item (C) Encourage new development to preserve on-site natural elements that contribute to the community's native plant and wildlife species value and to its aesthetic character.

Policy 3.1, Action Item (D) Support, and participate in, local and regional efforts of local, state and federal resource agencies (e.g. Santa Barbara County, California Department of Fish and Wildlife, Army Corps, United States Fish and Wildlife Service, local land trusts and conservation organizations) to protect, restore and maintain viable, contiguous areas of habitat for sensitive plant and animal species.

Policy 3.1, Action Item (E) Preserve the ecological integrity of creek corridors and the Santa Ynez River that support riparian resources by preserving native riparian plants and, to the extent feasible, removing invasive nonnative plants. If preservation of the ecological integrity of existing resources is found to be infeasible, adverse impacts to riparian resources shall be fully mitigated consistent with the requirements of applicable state and federal regulations.

Policy 3.1, Action Item (F) Require project proponents to identify and map sensitive biological and wetland resources on each development parcel and identify the measures necessary to avoid and/or minimize impacts on such resources prior to approving the development. Mitigation for impacts to sensitive biological and wetland resources shall replace the functions and values of the resources as well as gross acreage.

Policy 3.1, Action Item (G) Apply for United States Department of Agriculture (USDA) grants to provide funding for stabilization of creeks and creek banks.

Policy 8.1, Action Item (C) Manage open space designated land for the protection of sensitive biological resources primarily as a preserve. Allow recreation and public access only when consistent with the primary objective of protecting sensitive biological resources.

Policy 8.2, Action Item (E) Protect the urban forest created by mature trees in existing developed areas and in newly developing areas. Require that all new development incorporate the planting of trees and other vegetation that extend the vegetation pattern of older adjacent neighborhoods into new development.

5. CULTURAL RESOURCES. Would the project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X
1				X

Impact Discussion:

a-d) Government Code §65352.3 (SB 18) requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission for the purpose of protecting, and/or mitigating impacts to cultural places. The Santa Ynez Band of Mission Indians (SYBMI) was identified for consultation and a written notice sent to the SYBMI by certified mail on July 24, 2014. In addition AB 52 is a new state law that requires City to engage in early consultation at the request of tribal groups on development projects. Solvang is in an area known to have pre-historic and historic occupation by Native Americans. The proposed Conservation/Open Space Element update contains policies and programs that protect

the cultural and heritage of native peoples, to preserve and enhance Solvang's historical heritage. The following Action Items specifically promote the preservation and protection of cultural resources and at the program-level would serve to mitigate impacts on Tribal Cultural Resources:

Goals, Policies, and Action Items from the Conservation/Open Space Element:

Policy 4.1, Action Item (A) Continue to refer development proposals that may adversely affect archaeological sites to the Central Coast Information Center at the University of California Santa Barbara for review and comment.

Policy 4.1, Action Item (B) Continue to comply with the requirements Government Code Sections 65352.3 and 65352.4 which require the City to consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects.

Policy 4.1, Action Item (C) Do not approve any public or private project that may adversely affect an archaeological site without first consulting with applicable State and local agencies and organizations, conducting a site evaluation as may be indicated, and mitigating any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this action item shall be guided by Appendix K of the State CEQA Guidelines.

Policy 4.1, Action Item (D) Ensure the protection of archaeological sites that may be culturally significant to Native peoples, even if they have lost their scientific or archaeological integrity through previous disturbance; sites that may have religious value, even though no artifacts are present; and sites that contain artifacts which may have intrinsic value, even though their archaeological context has been disturbed.

Policy 4.1, Action Item (E)

Prior to approval of development within an archaeologically sensitive area, require a preliminary site survey by a qualified archaeologist knowledgeable in Native American cultures, prior to a determination of the potential environmental impacts of the project. Where a preliminary site survey finds substantial archaeological resources, before permitting construction, the City shall require a mitigation plan to protect the resources. Possible mitigation measures include:

- *Requiring the presence of a qualified professional during initial grading or trenching; project redesign;*
- *Covering with a layer of fill; excavation, removal and curation in an appropriate facility under the direction of a qualified professional.*

Where substantial archaeological resources are discovered during construction or grading activities, all such activities in the immediate area of the find shall cease until a qualified archaeologist knowledgeable in Native American cultures can determine the significance of the resource and recommend alternative mitigation measures.

Policy 4.1, Action Item (F) Establish and maintain archaeological site records about known sites. Specific archaeological site information shall be kept confidential to protect the resources. The City shall maintain, for public use, generalized maps showing known areas of archaeological sensitivity.

Policy 4.1, Action Item (G) Impose the following conditions on all discretionary projects which may cause ground disturbance:

"The Planning Department shall be notified immediately if any prehistoric, archaeological, or fossil artifact or resource is uncovered during construction. All construction must stop and an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to evaluate the finds and recommend appropriate action."

"All construction must stop if any human remains are uncovered, and the County Coroner must be notified according to Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) shall be followed."

Policy 4.2, Action Item (A) Work with property owners in seeking registration of historical structures and sites as State Historic Landmarks or listing on the National Register of Historic Sites.

Policy 4.2, Action Item (B) Support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved intact, the City shall seek to preserve the building facades.

Policy 4.2, Action Item (C) Consider demolition of historic resources as a last resort, to be permitted only if the following findings are made: rehabilitation and/or relocation are not feasible; the demolition of the resource is necessary to protect the health and safety of the public; or the public benefits of demolition outweigh the cost of preserving the resource. In all instances, the City shall gather and report input from the public prior to preparing a recommendation (for or against demolition) to decision-makers.

Policy 4.2, Action Item (D) Continue to implement the City's Community Design Element through the development review process.

6. GEOLOGY AND SOILS. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d) Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X
1				X
1				X
1				X
1				X

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

1				X
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Impact Discussion:

a-e) The Proposed Project does not involve any development or ground disturbance, therefore would not expose persons or structures to substantial adverse effects or geology and soils or include the use of septic tanks or alternative wastewater disposal systems.

The Proposed Project includes Goals, Policies, and Action Items to, at the program-level mitigate potential impacts that could occur with future Build-Out of the City.

Goals, Policies, and Action Items from the Conservation/Open Space Element:

Policy 8.1, Action Item (B) Designate as open space areas where development would be unsafe. These areas include, but are not limited, the following:

- *Land straddling active or potentially active earthquake faults.*
- *Land where risks of ground shaking, slope instability, settlement, or liquefaction cannot be adequately mitigated.*
- *Areas subject to flooding, where the frequency, depth, or velocity of floodwaters poses an unacceptable risk to life, health, or property.*
- *Areas of high or extreme wildland fire hazard.*

Goals, Policies, and Action Items from the Safety Element:

Policy 3.1, Action Item (A) Require and enforce all standards contained in the current California Building Code related to construction on unstable soils. The City should make a determination as to site suitability of all development projects during the building permit review process. Do not approve proposed development sited within areas of known or suspected instability until detailed area studies are completed that evaluate the extent and degree of instability and its impact on the overall development of the area.

Policy 3.1, Action Item (B) Require the preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction, slope instability, expansive soils or other geologic hazards.

Policy 3.1, Action Item (C) Require the design of underground utilities, particularly water and natural gas mains, to withstand seismic forces in accordance with state requirements.

Policy 3.1, Action Item (D) Adopt new California Building Code requirements, when necessary, to promote the use of updated design standards.

Policy 3.1, Action Item (E) Encourage investigations to improve the existing characterizations of faults in areas of existing or proposed development, and their potential to generate damaging earthquakes, for the purpose of assisting in the design of structures to resist seismic loads. Implement appropriate design standards and building codes that address local seismic conditions.

Policy 3.2, Action Item (A) The City will continue to enforce the California Building Code and the Alquist-Priolo Earthquake Fault Zoning Act that require geologic studies to be performed so that habitable structures and essential facilities will be sited away from active and potentially active faults.

Policy 3.3, Action Item (A) Enforce current building code requirements that require the potential for liquefaction to be addressed in the design of structures.

Policy 3.3, Action Item (B) Require geotechnical studies to be performed for habitable or important structures (as defined by the building code) sited in areas having moderate to high liquefaction potential. The geotechnical study should evaluate the potential for liquefaction and/or seismic related settlement to impact the development, and mitigation to reduce these potential impacts, if needed.

Policy 3.4, Action Item (A) For developments in areas of known slope instability, landslides, or slopes steeper than 20 percent, the stability of slopes shall be addressed by registered professionals practicing in their respective fields of expertise. For subdivisions, such studies should be performed prior to delineating lot lines and building envelopes.

Policy 3.4, Action Item (B) Prohibit new development in areas of known landslide activity unless development plans indicate that the hazard can be reduced to a less than significant level prior to beginning development.

Policy 3.4, Action Item (C) Prohibit the expansion of existing structures or developments in areas of known landslide activity except when it will reduce the potential for loss of life and property.

Policy 3.4, Action Item (D) Require development to mitigate the impacts that their project contribute to landslides and slope instability hazards on neighboring property, and appurtenant structures, utilities, and roads; such as emergency ingress and egress to the property, and loss of water, power or other lifeline facilities.

Policy 3.4, Action Item (E) Enforce current building code requirements and applicable ordinances that pertain to development on sloping ground.

Policy 3.4, Action Item (F) Require slope stability evaluations for developments in areas of moderate or higher landslide risk.

7. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	1				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	1				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	1				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	1				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	1				X

Impact Discussion:

a-h) The Proposed Project does not create any hazards or expose the public to any hazards, nor does it interfere with emergency service plans. Implementation of the Elements' Goals, Policies, and Actions Items would not create hazards, wildfire risk, interference with emergency access, etc.

The Safety Element (SE) promotes the safety of City residents. SE Goal 2.1 is to ensure that City emergency response procedures are adequate in the event of natural or human-made disasters; SE Goal 7.1 promotes the safe operation of airports. SE Policy 6.1 aims to reduce the potential for exposure to humans and the environment by Hazardous Substances. The following Action Items from the SE are intended to prevent significant environmental impact from hazardous materials:

Policy 6.1, Action Item (A) Work with CalTrans to require all transport of hazardous materials to follow CalTrans approved routes.

Policy 6.1, Action Item (B) In cooperation with the Santa Barbara County Public Health Department, require testing for contamination in areas suspected as potentially hazardous and shall require that the remediation of hazardous areas takes place prior to development.

Policy 6.1, Action Item (C) Maintain and implement when necessary a Hazardous Materials Incident Response Area Plan.

Policy 6.1, Action Item (D) Restrict the transport of hazardous materials within the City to designated routes.

Policy 6.1, Action Item (E) Provide the public, industry, agriculture, and local government with the available information needed to enable them to take rational and cost effective actions to minimize, recycle, treat, dispose of or otherwise manage hazardous wastes within the county.

The Conservation/Open Space Element also contains Policies to prevent environmental impacts related to Hazardous Materials. Conservation/Open Space Element Policy 2.1, Action Item (E) specifies regularly monitoring of water quality in City wells for evidence of toxics, saltwater intrusion, and other contaminants. Implementation of this Action item could potentially identify contaminants that reached groundwater wells. Thus, setting a framework to monitor for contamination would be considered a positive impact.

8. HYDROLOGY AND WATER QUALITY.
Would the project:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1			X	
3				X
1				X
1,6			X	
1,7			X	

f) Otherwise substantially degrade water quality?	1			X	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	1,6				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	1				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	1				X
j) Inundation by seiche, tsunami, or mudflow?	1				X

Impact Discussion:

- a-j) Proper management of water resources is essential for the protection of sensitive resources and to provide the domestic water supplies necessary for buildout of the City's General Plan Area. The Conservation/Open Space Element includes various Programs for meeting future demand, which include water conservation and the development of additional supplies. Potential impacts from future projects on both water quality (stormwater) and water supply (potable) will be addressed within the framework of the General Plan Conservation/Open Space Element at such time as specific projects are proposed for development. The Safety element includes actions to reduce potential impacts related to flooding and requires the City to maintain compliance with Title 13, Chapter 1 of the Solvang Municipal Code, Flood Plain Management.

The project description lists Conservation/Open Space Element Policies to protect and preserve the quality of water from local watersheds, groundwater basins, and the surface water bodies. The following action items from the Conservation/Open Space Element will help protect water quality, and maintain an adequate level of service in the City's water system to meet the needs of existing and future development.

Policy 2.1 Action Item (A) Continue to work with local, state, and federal agencies and other watershed organizations to maintain groundwater levels and improve water quality.

Policy 2.1, Action Item (B) Require new development to protect the quality of water bodies and drainage systems through adaptive site design, stormwater management, and the implementation of best management practices (BMPs). Apply the following principles of Low Impact Development in the review of development projects for purposes of minimizing runoff and potential water quality impacts: (a) make sensitive choices in site layout (b) use pervious surfaces (c) Disperse Runoff to Adjacent Pervious Areas (d) Direct runoff to bioretention facilities, flow-through planters, dry wells, or cisterns.

(Refer to the Cons./Open Space Element for full description of principles of Low Impact Development in the review of development projects for purposes of minimizing runoff and potential water quality impacts)

Policy 2.1, Action Item (C) Work toward the elimination of existing septic tanks within the City's Plan Area and as properties are annexed.

Policy 2.1, Action Item (D) Continue to use the California Environmental Quality Act (CEQA) process to identify and avoid (or mitigate) potential groundwater pollution problems resulting from new urban development.

Policy 2.1, Action Item (E)

Regularly monitor water quality in City wells for evidence of toxics, saltwater intrusion, and other contaminants.

Policy 2.1, Action Item (F) Implement watershed awareness and water quality educational programs for City staff, community groups, potential developers, and the public.

Policy 2.1, Action Item (G) Continue to implement the City's water conservation regulations and programs.

Policy 2.1, Action Item (H) Protect important groundwater recharge areas as open space. Prohibit land uses that may adversely impact groundwater from locating on or near groundwater recharge areas. Where applicable incorporate groundwater recharge into the design of new development.

Policy 2.2 The City shall continue to use groundwater as a source of domestic water for the city. The City shall also pursue, as expeditiously as possible, a water supply program consisting of the development of multiple sources of water, water conservation and groundwater management to accommodate projected water demand and provide for water supply security.

Policy 2.2, Action Item (A) Continue to implement the City's 2011 Water Supply Master Plan.

Policy 2.2, Action Item (B) Continue to expand water treatment, distribution, and storage facility systems for potable and non-potable systems as necessary to accommodate the needs of existing and planned development.

Policy 2.2, Action Item (C) Approve new development only with the assurance of an adequate water supply to support such development that meets City criteria for both potable and non-potable demands, and a City-approved funding mechanism to pay for necessary improvements.

Policy 2.2, Action Item (D) Coordinate, to the extent feasible, with other agencies involved in water resource development in the region.

Policy 2.2, Action Item (E) Systematically replace or repair leaking and deteriorated water lines.

Policy 2.2, Action Item (F) Ensure the provision of water supply, storage, and adequately-sized pipelines to provide fire flows to meet the recommendations of the City Fire Chief and City Engineer.

Policy 2.2, Action Item (H) Through a combination of water development fees and other funding mechanisms, ensure that new development pays its share of the costs of water system improvements.

Policy 2.2, Action Item (I) Require all new development to use best available technologies for water conservation including, but not limited to, water-conserving toilets, showerheads, faucets, and irrigation systems.

Policy 2.2, Action Item (J) Require drought tolerant landscaping/plant species and water-conserving irrigation systems in all new development.

The following action items from the Safety Element will minimize potential impacts due to flooding and prevent loss of life, injury and property damage due to flooding:

Policy 4.1, Action Item (B) Prepare and adopt flood management plans and practices aimed at protecting life and property from the harmful effects of flooding. As part of this effort, the City shall establish criteria for:

- Evaluating whether new development should be located in flood hazard zones;*
- Identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones, and*
- Maintaining the structural and operational integrity of essential public facilities during flooding.*

9. LAND USE AND PLANNING. Would the project:

- a) Physically divide an established community?
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X

Impact Discussion:

- a.) The Proposed Project does not propose development that would physically divide the community.
- b.) The Proposed Project does not conflict with the plans, policies, or regulations of the City. The Elements are consistent with the other elements of the General Plan and with the Municipal Code.
- c.) The Proposed Project does not affect any applicable habitat conservation plan or natural community conservation plan. Furthermore the Conservation/Open Space element serves to protect and preserve natural communities and habitats. Policy 3.1 stipulates compliance with the relevant provisions of state and federal laws relating to the preservation of rare, threatened, or endangered species and their habitat prior to project approval and/or prior to construction as determined by the requirements set forth in the federal and state Endangered Species Acts, the federal Clean Water Act, and the federal Rivers and Harbors Act.

The Safety Element Policy 4.2, Action Item (F) Prohibits the creation of parcels upon which the presence of easements, floodplain, marsh or riparian habitat, or other features would leave insufficient land to build and operate structures. This action item shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

10. MINERAL RESOURCES. Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X

Impact Discussion:

- a-b.) The COSE and Safety Elements do not propose development that could result in the loss of mineral resources. Refer to project description for summary of all policies applicable to the management of mineral resources.

11. NOISE. Would the project result in:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X
1				X
1				X
1				X

Impact Discussion:

- a.-f.) The implementation of the updated Conservation/Open Space and Safety Elements is not anticipated to significantly increase noise levels beyond the levels identified in the adopted Noise Element and the Land Use Element cumulative "build out" condition because no new or increased density land uses are proposed.

12. POPULATION AND HOUSING. Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X

Impact Discussion:

a-c.) The Proposed Project will not induce population growth or displace existing housing, therefore no impact is identified.

13. PUBLIC SERVICES.

- a) Would the project result in substantial adverse physical impacts associated with the stipulation of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
- b) Fire protection?
- c) Police protection?
- d) Schools?
- e) Parks?
- f) Other public facilities?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X
1				X
1				X

Impact Discussion:

a-f) The Proposed Project does not include the expansion of the City Limits or Sphere of Influence therefore no substantial impacts to Public Services are anticipated. See project description for all Policies of the Proposed Project.

Safety Element Policy 5.2, Action Item (A) requires the City to work with Santa Barbara County to achieve and maintain staffing, facilities and response time goals for the City consistent with National Fire Protection Association standards. This action item ensures adequate public services shall be in place to provide fire protection. The construction of new or expanded facilities necessary to maintain the desired level of service will be subject to separate, project specific CEQA compliance.

14. RECREATION:

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X

Impact Discussion:

- a.) The Proposed Project does not include changes to any land use designations and would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- b.) The Proposed Project does not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. The Conservation/Open Space Element Policy 8.1, Action Item (K) considers the establishment of creekside trails. Potential impacts from development of recreational trails would be addressed at such a time specific projects are proposed for development and would be subject to separate, project specific CEQA compliance.

15. TRANSPORTATION/TRAFFIC: Would the project:

- a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?
- b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
4				X
4				X

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	1				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	1				X
e) Result in inadequate emergency access?	1				X
f) Result in inadequate parking capacity?	1				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	1				X

Impact Discussion:

a-g) The Proposed Project does not recommend changes to land use designations and is not anticipated to cause impacts to traffic or circulation within the City. The improvements and programs in the Safety Element provide a framework to minimize safety problems related to traffic. Safety element Policy 2.1, Action Item (E) ensures the City's emergency access routes are kept free of traffic impediments.

As discussed in section 3. Air Quality, the Conservation/Open Space Element Policies 5.2 and 5.3 were developed to reduce impacts of motor vehicle use, traffic congestion and supports vehicle trip reduction through more efficient infrastructure and support for trip reduction programs. Aiming to reduce automobile dependency supports a reduction of traffic impacts. Therefore, implementation of the Proposed Project would not result in adverse impacts upon traffic and circulation.

16. UTILITIES AND SERVICE SYSTEMS.

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X
1				X
1				X

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	3				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	1				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	1				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	1				X

Impact Discussion:

a-f) Neither the Draft Conservation and Open Space Element nor the Draft Safety Element would necessitate the construction of additional wastewater, storm drainage facilities or require additional landfill capacity. The City has adopted Master Plans for Water Supply and Wastewater. These long-range plans accommodate General Plan build out. Existing capacity for wastewater, storm water runoff, and water supply are adequate to accommodate projected build out of the City.

In addition, Conservation/Open Space Policy 2.2, Action Item B requires the City to continue to expand water treatment, distribution, and storage facility systems for potable and non-potable systems as necessary to accommodate the needs of existing and planned development. Policy 2.2 Action Item C stipulates that new development shall be approved only with the assurance of an adequate water supply to support such development that meets City criteria for both potable and non-potable demands, and a City-approved funding mechanism to pay for necessary improvements. These action items help to ensure utilities and service systems are not impacted by future development, thus, a positive impact.

17. MANDATORY FINDINGS OF SIGNIFICANCE.

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1				X

<p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?</p>	1				X
<p>c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?</p>	1				X

Impact Discussion:

The updated Conservation/Open Space and Safety Elements include program-level policies to mitigate (at a program level) potential environmental effects related to air quality, noise, flooding, biotic resources and open space. Likewise the City's adopted master plans for storm water drainage, water supply and wastewater in addition to other General Plan Elements anticipate the cumulative effects of General Plan build out and also include action items, and programs to mitigate potential environmental effects. The proposed project does not have the potential to impact the environment.

18. EARLIER ANALYSES.

Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one of more effects have been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063 (c) (3) (D0. In this case a discussion should identify the following items:

- a) **Earlier analysis used.**
None
- b) **Impacts adequately addressed.** (Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.)

Cumulative impacts associated with the build out of the City General Plan Land Use Element and Circulation Element were adequately addressed in the Mitigated Negative Declaration prepared for the Update to those Elements in 2008.
- c) **Mitigation measures.** (For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions of the project.)

None

19. SOURCE REFERENCES.

1.	City of Solvang. General Plan. Amendments through 2015.
2.	Santa Barbara Air Pollution Control District. www.sbcapcd.org . 2015.
3.	Public Review Draft Conservation/Open Space Element, July 2015
4.	Public Review Draft Safety Element, July 2015
5.	City of Solvang General Plan Conservation, Open Space and Safety Elements Background Report, July 2015