6
Open Space & Conservation

The Porterville Planning Area includes natural resources that are important, not only for their aesthetic values, but also for environmental quality, habitat protection, recreation, water resources, and agriculture production. The Open Space & Conservation Element is intended to establish policies and programs for the conservation, development, and use of open space and natural resources. Topics addressed include: open space; agriculture and farmland resources; land resources including soils and minerals; biological resources; water quality; air quality; and cultural resources.

The three General Plan initiatives this element addresses are: providing Porterville with a network of parks and open space; protecting ridgelines, visible hillsides, and significant environmental resources; and protecting community assets. This element also supports rural conservation within the County through compatible development that preserves natural features, sensitive habitats, and agricultural resources.

In conjunction with the Land Use Element and the Circulation Element, the policies and implementation actions of this element become an Open Space & Conservation Action Plan. The Land Use Element fosters a compact development pattern with strong urban "edges" in order to protect adjacent agricultural lands, the Tule River Parkway, and hillsides, and contribute to the sense of place for the community. The new Resort Residential area near Lake Success will incorporate an open space system of parks, trails, and natural reserves, while accommodating new housing and recreation opportunities. The expanded and interconnected trail and circulation network in the Circulation Element links Porterville's residents directly to these resources.

6.1 OPEN SPACE

The City of Porterville is located in the southern portion of the San Joaquin Valley at the base of the Sierra Nevada foothills. It is surrounded by farmland. The Tule River flows down from Lake Success and through the city. Views extending along the river and of its heavily vegetated banks contribute to the scenic quality of the area. Rocky Hill is a prominent visual landmark and potential recreation area. The agricultural foundation, topography and landscape are important not only for community identity and aesthetic value, but also for environmental quality, habitat protection, and recreation opportunities.

Open space near Porterville

The City of Porterville defines open space as any parcel of land or body of water that is essentially unimproved and undeveloped, with the exception of designated historical properties. This includes agricultural land, recreation areas, areas with hazardous conditions, and conservation areas. Currently there are approximately 21,270 acres being used for agriculture or are considered rural or conservation uses. In addition, there are about 1,400 acres of other public/quasi-public land which is open space:

- Parkland – 295 acres
- Yandanchi Ecological Preserve – 164 acres
- Lewis Hill Preserve – 107 acres (included in the Agriculture/Rural/Conservation total)
- Cemeteries – 195 acres
- Water systems and sewer treatment plant – 725 acres

Tulare County's Bartlett Park is located near the base of Success Dam; however its future status is unconfirmed.

The Lake Success recreation areas, along the north-eastern edge of the Planning Area, provide camping, fishing, picnicking and boating opportunities. Tulare County's Bartlett Park is located near the base of Success Dam; however its future status is unconfirmed. In total, approximately 62 percent of the Planning Area was open space in 2005.

In order to conserve the existing open space and unique landscape features, and protect views, the City is currently preparing a Hillside Development Ordinance which details design and planning standards for the foothills area. In addition, the Foothill Growth Management Plan, an element of the existing Tulare County General Plan, helps guide development in the area.

Figure 6-1

2030 Open Space Resources

- **Public Health and Safety**
  Includes 100-year flood plain, slopes with more than 25 percent grade, and under the airport flight paths
- **Natural Resources**
  Includes land in the valley-foothill riparian habitat and ecological preserves
- **Managed Resource Production**
  Includes prime farmland, farmland of statewide importance, and mineral resource zones
- **Outdoor Recreation**
  Includes the Tule River Parkway, the Rails-to-Trails bike and pedestrian trail, plus existing and proposed parks
- **Urban Form Limit**
  Includes land designated as Rural Residential
- **Recreation Residential**
- **Developed Land in 2030**
- **Planning Area**

Lake Success

Porterville Municipal Airport

40 acres
10 acres

0 1125 2250 4500 9000
FEET

November 2007

CLASSIFICATION OF OPEN SPACE

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by identifying open space categories. An additional category is proposed for this Plan to help define the urban development edge.

- *Open space for public health and safety* including, but not limited to, areas that require special management or regulation due to hazardous or special conditions. This type of open space might include: earthquake fault zones, unstable soil areas, floodplains, watersheds, areas presenting high fire risks, and areas required for the protection of water quality and water reservoirs. In Porterville, this category includes land in the 100-year flood plain, slopes with more than 25 percent grade, and land beneath the airport approach and departure zones.
- *Open space for the preservation of natural resources,* including, but not limited to, areas required for the preservation of plant and animal life, such as habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, and creeks, lakeshores, banks of rivers and streams; and watershed lands. In Porterville, this category includes lands such as those in the valley-foothill riparian habitat, ecological preserves, and conservation areas.
- *Open space used for the managed production of resources,* including, but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground water basins; marshes, rivers and streams that are important for the management of commercial fisheries; and areas containing major mineral deposits. In Porterville, this category includes prime farmland, farmland of statewide importance, and mineral resource zones.
- *Open space for outdoor recreation,* including, but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, such as access to lakeshores, beaches, rivers and streams; and areas that serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors. In Porterville, this category includes areas such as the Tule River Parkway, the Rails-to-Trails bike and pedestrian trail, plus existing and proposed parks. Over the long-term, Rocky Hill will also provide opportunities for limited outdoor activities, such as hiking and horseback riding.
- *Open space for the protection of Native American sites,* including, but not limited to, places, features and objects of historic, cultural, or sacred significance such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in California Public Resources Code Sections 5097.9 and 5097.993). These sites are not included on Figure 6-1, as locations are suppressed for their protection.
- *Open space to shape and limit urban form,* including, but not limited to, areas such as greenbelts and open space corridors established to implement community design goals and objectives. In some areas of Porterville, this category includes land designated as Rural Residential, as well as open space in other categories.

PLANNED OPEN SPACE NETWORK

Figure 6-1 illustrates a composite of the open space classifications established in State law, with the addition of the land categorized as Rural Residential in order to shape the urban form. The illustrated open space resources are not intended to imply that the public interest would be best served by prohibiting development on all such lands. Rather, these open space resources likely signify one of three possible scenarios, depending upon the ecosystem fragility, location, hazard potential, regulatory constraints, and other pertinent factors.

The three possible scenarios are:

- All development should be prohibited;
- Development should be permitted on part of the land and the balance preserved as open space—a clustering concept; or
- Development should be permitted subject to site plan review and the imposition of specific conditions to protect against hazards, preserve the integrity of the land and the environment, and meet specific development and design standards (e.g., for the Hillside Development Zone).

Determination of how these open space resources are to be protected will be made on a case-by-case basis following standards and review procedures established in the Zoning and Subdivision ordinances consistent with General Plan policies.

Resort Residential Community near Lake Success

Integrating the Lake Success Resort Residential area with the open space network is a very high priority for future planning efforts. The physical designs of the park and open space systems for the Resort Residential Community should create a unique image and recreational space. This includes the connectivity to the Rocky Hill area, its trails, and its other recreational amenities.

GUIDING POLICIES

OSC-G-1 *Protect the Tule River Corridor and Rocky Hill as significant open space resources.*

OSC-G-2 *Use the open space system to meet multiple needs, including bike and trail linkages, storm water drainage and treatment, wildlife habitat, and active and passive recreation.*

OSC-G-3 *Design public open spaces as sustainable systems.*

IMPLEMENTATION POLICIES

OSC-I-1 Adopt resource protection regulations for Agricultural/Rural/Conservation areas designated on the General Plan Land Use Diagram.

This will include City-owned lands used for wastewater reclamation.

OSC-I-2 Work with the County with the objective of:

- Retaining agriculture and open space areas around the City, consistent with the General Plan; and
- Notifying the City of development applications to areas adjacent to the City's Planning Area.

Joint planning agreements or Memoranda of Understanding (MOUs) have been used successfully in many jurisdictions. This policy is intended to create a mechanism to protect the open space, wetlands, and creeks that form the backdrop for the City, so that the City can keep a distinct urban edge.

OSC-I-3 Establish a secure funding source for open space acquisition and management.

Options to be evaluated may include, but are not limited to: a dedication by future private development; an increase in the Transient Occupancy Tax; a Utility User's Tax or a Property Transfer Tax. These latter options would require voter approval.

OSC-I-4 Establish standards for the management and maintenance of open space within subdivisions, and require formation of open space acquisition and maintenance districts where necessary and appropriate, to protect open space resources.

OSC-I-5 Require, as a condition of any Resort Residential development, commitments to permanent open space, and preservation of ridges and steep hillside land that form the scenic backdrop of the Resort Residential district.

OSC-I-6 Support the preservation of the Yaudanchi Ecological Preserve.

OSC-I-7 Use native vegetation, drought tolerant plants, recycled water irrigation, other water-saving devices drainage swales and water percolation systems, and recycled building materials in public open spaces for ease of maintenance and environmental sustainability.

OSC-I-8 Provide a variety of outdoor recreation opportunities through improvements to open space and parks, construction of facilities, and sponsoring of programs that stimulate active resident participation.

OSC-I-9 Require degraded open space areas be restored to an environmentally sustainable condition as part of development approval where these lands are proposed as permanent open space in new development.

OSC-I-10 Work with property owners, law enforcement officials, and the public to protect open space resources. These efforts will include, but are not limited to:

- Soliciting volunteers to remove invasive vegetation;
- Removing abandoned items and trash; and
- Ensuring no illegal encampments occur on open space areas.

OSC-I-11 Support regional and subregional efforts to acquire, develop, and maintain, open space lands.

OSC-I-12 Establish priorities for open space preservation and acquisition based on an evaluation of:

- Significant natural areas that are historically, ecologically, or scientifically unique or are outstanding, important or threatened;
- Wildlife habitats and fragile ecosystems in need of protection;
- Watersheds or significant water recharge areas;
- Lands suitable for recreation such as biking, photography or nature study; and
- Land suitable for agricultural production.

OSC-I-13 Preserve Rocky Hill as an open space resource through the establishment of a conservancy, Open Space District, or other device.

OSC-I-14 Establish incentives to preserve open space in very low density residential areas.

One option will be to allow clustering of housing units on smaller lots in return for preservation of common area open space.

OSC-I-15 Preserve open space designated for public safety to minimize damage to people and property resulting from potential hazards. Such hazards include, but are not limited to: quaking, slope collapse, liquefaction, fire, earth sliding, flooding, erosion and siltation, soil compression, lateral spreading, and subsidence.

An easement can be used to restrict development near safety hazards, travel networks such as bike or pedestrian paths, as well as near natural resources such as streams that require buffers for water quality protection. The easement does not require the transfer of ownership of property but rather reduces the development potential of the land in order that it may continue to serve the necessary open space purpose.

6.2 AGRICULTURE & FARMLAND RESOURCES

Agriculture is one of the most prominent open space uses in the Porterville Planning Area. Agriculture also is an important contributor to the City's economy and character. California law requires that a General Plan address agricultural resources from both a soil conservation and open space perspective.

Grazing land near Lake Success

FARMLAND

Farmland across the state has been classified by the California Department of Conservation with respect to its potential for agricultural productivity based on soil type and other physical characteristics. The State applies seven farmland categories:

- ***Prime Farmland.*** Land with the best combination of physical and chemical features able to sustain long-term agricultural production.
- ***Farmland of Statewide Importance.*** Similar to Prime Farmland but with minor shortcomings, such as greater slopes or decreased ability to store soil moisture.
- ***Unique Farmland.*** Land with lesser quality soils used for the production of the state's leading agricultural crops.
- ***Farmland of Local Importance.*** Land of importance to the local agricultural economy as determined by each county's board of supervisors and local advisory committee.
- ***Grazing Land.*** Land on which the existing vegetation is suited to the grazing of livestock.
- ***Urban and Built-up Land.*** Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel.
- ***Other Land.*** Low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres.

In 2006, farmland, as defined by the State soil categories, accounted for approximately 56 percent of the Planning Area. The remaining 44 percent of the Planning Area is designated as either urban and built-up, water resources, or other types of soils.

Table 6-1: Existing Farmland Soils in Planning Area

Type	*Existing Acres*	*Percent of Planning Area*
Prime Farmland	3,723	10%
Farmland of Statewide Importance	5,579	15%
Unique Farmland	1,351	4%
Farmland of Local Importance	2,060	6%
Grazing Land	7,916	22%
Urban	14,360	40%
Other Land & Water	1,352	4%
Total	**36,341**	**100%**

Note: Farmland is not equivalent to land designated for Agriculture/Rural/Conservation uses. These designations are defined by the State based on soil types.

Source: Department of Conservation, Division of Land Resource Protection; Dyett & Bhatia, 2007.

Williamson Act

The California Land Conservation Act, commonly referred to as the Williamson Act, was enacted in 1965 to preserve agricultural and open space land in danger of premature conversion to urban uses. Its success has been based on the dual incentives of lowered property taxes for individual landowners and payments of subventions to counties for some of the losses of property tax revenues. Currently, approximately 35 percent of the farmland is designated as Williamson Act land.

FARMLAND PROTECTION ISSUES

Significant agricultural land area within the Porterville Planning Area is likely to be converted to urban uses over the next 23 years, in order to accommodate the projected growth. At buildout, 70 percent of the Planning Area will be either urban, water resources or other soil types, and 30 percent will be in agricultural use. Farmland soils at buildout are illustrated on Figure 6-2.

Table 6-2: Buildout Farmland Soils in Planning Area

Type	*Buildout Acres*	*Percent of Planning Area*
Prime Farmland	674	2%
Farmland of Statewide Importance	2,187	6%
Unique Farmland	528	1%
Farmland of Local Importance	548	2%
Grazing Land	6,946	19%
Urban	25,239	69%
Other Land & Water Resources	219	1%
Total	**36,341**	**100%**

Source: Department of Conservation, Division of Land Resource Protection; Dyett & Bhatia, 2007.

Figure 6-2

Farmlands, 2030

- Prime Farmland
- Farmland of Statewide Importance
- Farmland of Local Importance
- Unique Farmland
- Grazing Land
- Developed Land in 2030
- Other Land
- Williamson Act Lands
- Planning Area

Source: California Department of Conservation, 2002.

40 acres
10 acres

0 1125 2250 4500 9000
FEET

November 2007

Continued conversion of agricultural lands to urban uses and rural residential uses could have an impact on the County's agricultural economic base. For that reason, the Land Use Element establishes a fairly compact urban area, encouraging infill development and new growth adjacent to or near existing urban uses, thus minimizing sprawl and unnecessary conversion of agricultural lands. The Open Space and Conservation Action Plan also calls for protection of surrounding agricultural lands.

GUIDING POLICY

OSC-G-4 *Promote preservation of agriculture lands within and adjacent to the Planning Area.*

IMPLEMENTATION POLICIES

OSC-I-16 Decline requests for annexation of any land subject to an ongoing Williamson Act contract.

OSC-I-17 Prohibit the conversion of prime agricultural land for urban development through General Plan amendments, after adoption of this General Plan Update, unless there are no other feasible alternatives for development.

OSC-I-18 Adopt a Right to Farm Ordinance to facilitate the continuance of agricultural activities within the Planning Area until the land is needed to accommodate population and employment growth.

A Right to Farm ordinance will require developers adjacent to sites where agricultural uses are being conducted to inform subsequent buyers of potential continued agricultural production and the lawful use of agricultural chemicals, including pesticides and fertilizers.

OSC-I-19 Work with the County Sheriff and other law enforcement agencies to combat vandalism of agricultural activities.

OSC-I-20 Work with Tulare County and non-profit land trusts to establish and fund programs for purchase of conservation easements, which may assist property owners who want to maintain agricultural and rural land in the Planning Area.

6.3 LAND RESOURCE CONSERVATION

SOILS

The City of Porterville sits on top of the alluvial fans of the Tule River and its distributaries. The bedrock is present at relatively shallow depths beneath the eastern end of Porterville. However, the depth to bedrock deepens appreciably to the southwest. There are four general soil types in the Planning Area. The first is located northeast of the City and is described as moderately deep to very deep, well-drained, low permeability clay. The second is located to the south of the City and consists of very deep, moderately well to excessively well-drained, fine sandy loam. The third, found northwest of the City, is characterized as moderately deep, well-drained, sandy loam underlain by hardpan. The fourth type consists of rock outcrops of exposed bedrock found on the slopes of the Sierra Foothills.

Conservation efforts are continually being made to prevent soil erosion and the chemical alteration of soils caused by overuse, salinization, acidification, or other chemical soil contamination. It is important to maintain soil quality to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation. While State and federal laws regulate soil quality, as indicated by the farmland classification system, local land use planning is important for limiting erosion potential.

Erosion Potential

Erosion is the process by which the soil and rock components of the Earth's crust are worn away and removed from one place to another by natural forces such as weathering, solution, and transportation. Soil erosion can lead to sedimentation of watercourses, eventually having an adverse impact on water quality and aquatic life. Furthermore, once erosion occurs, it may be difficult for natural vegetation to reestablish itself. The loss of topsoil to erosion is detrimental to agriculture and other landscaping. The risk of erosion is greatly increased during grading and construction activities, and agricultural practices, when soils are loosened and bare of vegetation.

Soil erodibility can be identified by a specific soil's "K-Factor." [5] Values of K range from 0.02 to 0.69, with the higher the value, the more susceptible the soil is to erosion. Soils with K factors above 0.40 are considered to be the most susceptible to erosion. However, this factor is only one of the measurements needed to determine overall soil erosion potential. It does not take the impacts of rainfall, slope above nine percent and groundcover on erosion potential into account.

There are no soils with a K factor higher than 0.37, as determined by the U.S. Natural Resource Conservation Service, in the Planning Area. Soils with moderate or moderate-high erodibility are found throughout the Planning Area. In general, soil conservation is addressed by the City's site review and grading plan requirements. Soil erosion potential is mapped in Figure 7-1, Geologic Hazards, and the acreage of land in each category is summarized in Table 6-3.

Table 6-3: Soil Erosion Susceptibility[1]

Category	*Total Acres*	*Percentage of Total*
Low (0 – 0.17)	1,888	5%
Moderate (0.18- 0.28)	4,728	13%
Moderate-High (0.29 - 0.37)	19,995	55%
Not Classified[2]	9,729	27%
Total	**36,341**	**100%**

[1] The evaluation does not account for slope above 9 percent grade, amount of groundcover, or amount of rainfall which impact erosion.

[2] Unclassified could mean the area is currently under study, about to be studied or does not meet basic classification criteria (such as rivers, lakes, etc.).

Source: USDA Soil Survey Geographic Database, 2005.

[5] Natural Resources Conservation Service. *National Soil Survey Handbook*. http://soils.usda.gov/technical/handbook/contents/part618.html

MINERAL RESOURCES

The most economically significant mineral resources in Tulare County are sand, gravel, and crushed stone, used as sources for aggregate (road materials and other construction). The two major sources of aggregate are alluvial deposits (river beds and floodplains), and hard rock quarries. Consequently, most Tulare County mines are located along rivers at the base of the Sierra foothills.

Surface mining in California is regulated through the Surface Mining and Reclamation Act (SMARA), a State law adopted in 1975 to address the dual goals of protecting the state's need for a continuing supply of mineral resources, while protecting public and environmental health. SMARA mandates that land be reclaimed after mining has ceased. Reclamation plans often restore land for agricultural uses or as wildlife habitat.

SMARA requires that all cities incorporate into their general plans mapped mineral resource designations approved by the State Mining and Geology Board. The State Geologist classifies land in California based on availability of mineral resources. Because available aggregate construction material is limited, five designations have been established for the classification of sand, gravel and crushed rock resources:

- **Scientific Resource** (**SZ**) areas contain unique or rare occurrences of rocks, minerals or fossils that are of outstanding scientific significance.
- **Mineral Resource Zone 1** (**MRZ-1**) is an area where adequate information indicates that no significant mineral deposits are present or likely to be present. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight.
- **Mineral Resource Zone 2** (**MRZ-2**) is an area where adequate information indicates that significant mineral deposits are present or there is a high likelihood for their presence and development should be controlled.
    - **MRZ-2a:** Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.
    - **MRZ-2b:** Areas classified MRZ-2b contain discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history.
- **Mineral Resource Zone 3** (**MRZ-3**) is an area where the significance of mineral deposits cannot be determined from the available data.
    - **MRZ-3a:** MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits due to direct evidence of a surface exposure of a geologic unit, such as a limestone body, known to be or to contain a mineral resource elsewhere but has not been sampled or tested at the current location.
    - **MRZ-3b**: Land classified MRZ-3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. MRZ-3b

is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present.

- **Mineral Resource Zone 4 (MRZ-4)** is an area where there is insufficient data to assign any other MRZ designation.[6]

Table 6-4: Mineral Resources

Type	*Acres*	*Percent of Planning Area*
MRZ-2a	55	0.2%
MRZ-2b	487	1.3%
MRZ-3a	348	1.0%
Total	**890**	**2.5%**

Source: California Division of Mines and Geology, 1997.

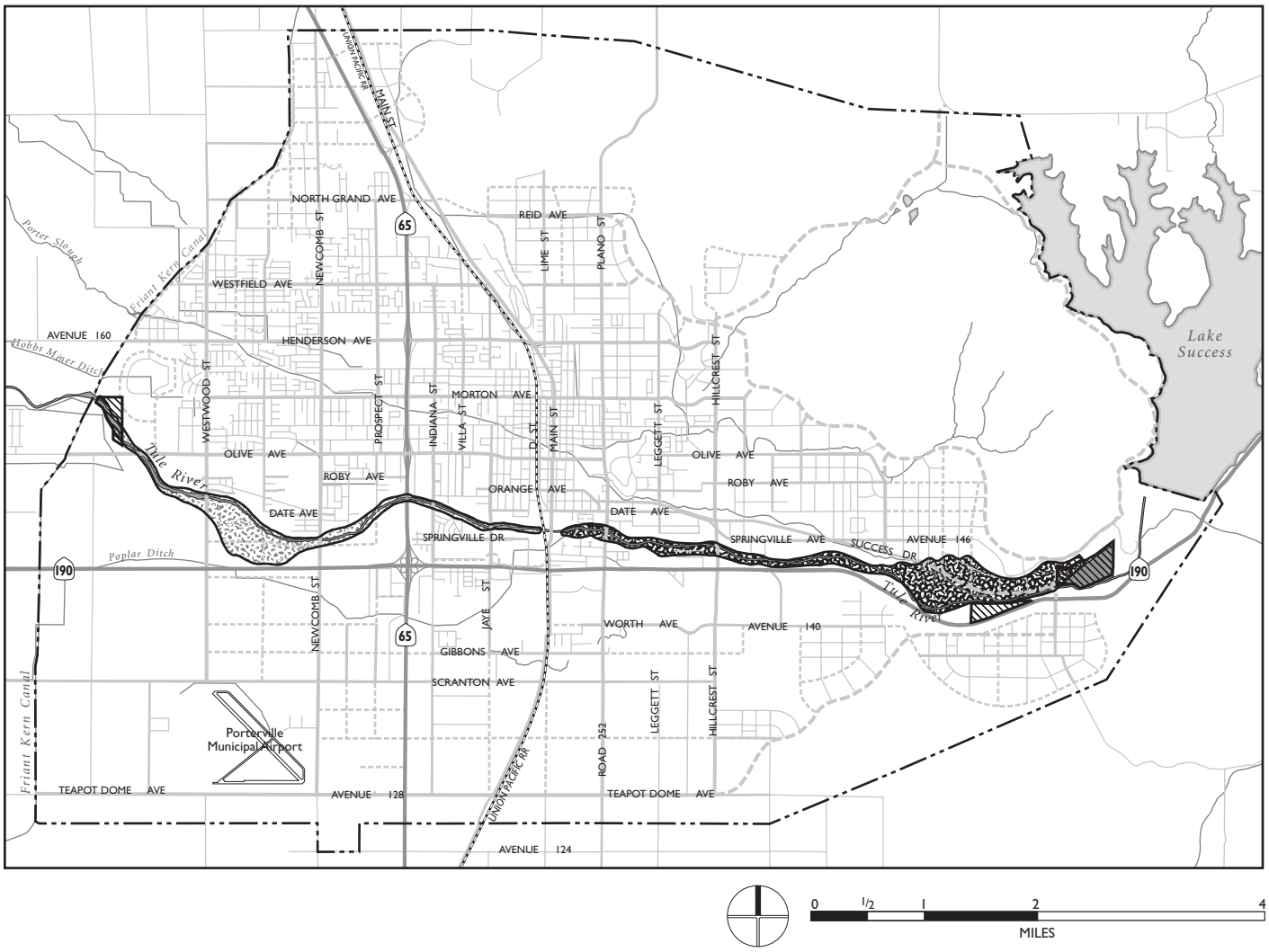
As shown in Table 6-4 and Figure 6-3, the area along the Tule River contains various State-classified mineral resource zones (MRZ-2a, MRZ-2b, and MRZ-3a). While this area was once suitable for mining operations, it is now surrounded by urban development and as such, extraction and transport of mineral resources would conflict with the surrounding urban uses. A total of 890 acres within the Planning Area is located within State-designated mineral resource zones.

In Tulare County, the Resource Management Agency is the lead agency for processing Tulare County surface mine reclamation plan applications.[7]

The City is responsible for designating Regionally Significant Construction Aggregate Resource Areas or identifying mineral resources to be conserved. Historically, the quarrying of magnesite was a significant industry in the City of Porterville. As of 2004, there were three active construction-grade sand and gravel mining sites in the Planning Area: Porterville Ready Mix's Vollmer site near where the Tule River meets the Friant-Kern Canal and two Mitch Brown sites along the Tule River below Success Dam. In addition to these known concentrations, there are areas scattered throughout the Planning Area that contain marginal deposits of feldspar, silica, limestone and other rock products which are not mapped.

[6] California Department of Conservation, *Guidelines for Classification and Designation of Mineral Lands*, http://www.consrv.ca.gov/SMGB/Guidelines/ClassDesig.pdf

[7] Tulare County: http://www.co.tulare.ca.us/government/rma/countywide/mineral.asp



Mineral Resource Zones

- MRZ-2a Significant aggregate deposit
- MRZ-2b High likelihood of significant aggregate deposit
- MRZ-3a May contain significant aggregate deposit
- Active Mining Area
- Planning Area

Source: California Department of Mines and Geology, Tulare County, 2007.

Figure 6-3

Soil and Mineral Conservation

GUIDING POLICIES

OSC-G-5 *Preserve soil resources to minimize damage to people, property, and the environment resulting from potential hazards.*

OSC-G-6 *Protect significant mineral resources.*

IMPLEMENTATION POLICIES

OSC-I-21 Adopt soil conservation regulations to reduce erosion caused by overgrazing, plowing, mining, new roadways and paths, construction, and off-road vehicles.

OSC-I-22 Continue to require soils and geologic surveys for all proposed development in hillside areas.

OSC-I-23 Require adequate grading and replanting to minimize erosion and prevent slippage of manmade slopes.

Plant materials for re-vegetation should not be limited to hydro seeding and mulching with annual grasses. Trees add structure to the soil and take up moisture while adding color and diversity.

OSC-I-24 Require all mining and sand extraction operations to mitigate completely environmental impacts, including operations affecting water quality, habitat preservation, aesthetics and bridge undermining, and to submit reclamation and ultimate use plans for City approval prior to initiating operations.

OSC-I-25 Work with Tulare County to ensure that reclamation and ultimate use plans for mining operations land are consistent with the General Plan.

6.4 BIOLOGICAL RESOURCES

The City of Porterville Planning Area lies in two primary eco-regions: the larger Sacramento/San Joaquin Valley (larger western portion of the study area) and the Sierra Nevada Foothills (located near the eastern boundary). Consequently, the Planning Area includes a variety of biological habitats ranging from vernal pools/wetland communities to blue oak woodlands. Both larger eco-regions traverse the study area in a north-south pattern and include a variety of plant and wildlife species. Numerous special status species occur in the Planning Area. These species are designated by federal or State agencies as needing protection due to rarity or threats to their existence.

FLORA

The Sacramento/San Joaquin Valley eco-region includes large agricultural areas, croplands, orchards, and vineyard habitat types. Vernal pools, including Northern claypan vernal pools, can be found in and beyond the southern portion of the Planning Area, particularly along the SR 65 corridor. Seasonal wetlands may occur adjacent to the Tule River, Porter Slough, and Lake Success. Isolated wetlands also may be found within pasture, grazing or grassland areas. The Sierra Nevada Foothill eco-region is largely composed of annual grassland areas, with areas of montane hardwood located in the higher elevations. Areas of valley-foothill riparian habitat are located in less developed areas around the river and enhance the aquatic habitat of the Tule River.

Valley Oak trees, which have inherent aesthetic and wildlife value, occur in the Planning Area. The City of Porterville does not currently have a tree preservation ordinance; therefore, policies aimed to protect these trees whenever possible are included in the General Plan.

As illustrated in Figure 6-4, portions of the Planning Area provide potential and known habitat for several special status plant species. These species include: Keck's checkerbloom (*Sidalcea keckii*); Springville clarkia (*Clarkia springvillensis*); San Joaquin adobe sunburst (*Pseudobahia peirsonii*); Striped adobe-lily (*Fritillaria striata*); Madera leptosiphon (*Leptosiphon serrulatus*); Calico monkeyflower (*Mimulus pictus*); and Spiny-sepaled button-celery (*Eryngium spinosepalum*). In addition, elderberry shrubs which support the special status species, Valley elderberry longhorn beetle, are known to occur in various areas throughout the Planning Area.

Lewis Hill Preserve

Lewis Hill Preserve was established in 1994 and is now managed by the Sequoia Riverlands Trust. It is a 110-acre preserve located in the northern portion of the Planning Area which protects two rare wildflower species, the striped adobe lily and San Joaquin adobe sunburst. The open grasslands and blue oak woodlands of the southern Sierra Nevada foothills provide critical habitat for these flowers.[8]

[8] Sequoia Riverlands Trust. http://www.sequoiariverlands.org/ May 24, 2007.

FAUNA

The Planning Area provides appropriate habitats for a variety of wildlife species including but not limited to mule deer, coyotes, grey fox, cottontails, kangaroo rats, scrub jays, herons, falcons, finches, and sparrows.

As illustrated in Figure 6-4, the Planning Area provides known or high potential habitat for various State and federal special status animal species. These species include: California condor (*Gymnogyps californianus);* San Joaquin kit fox (*Vulpes macrotis mutica*); Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*); Vernal pool fairy shrimp (*Branchinecta lynchi*); American badger (*Taxidea taxus*), Pallid bat (*Antrozous pallidus*); Western mastiff bat (*Eumops perotis californicus*); Great Blue Heron *(Ardea herodias)*; Western pond turtle (*Emys marmorata*); Tricolored blackbird (*Agelaius tricolor*); Morrison's blister beetle (*Lytta morrisoni*); and Molestan blister beetle (*Lytta molesta*).[9]

San Joaquin kit fox

In addition, there is potential for a few protected species such as the White-tailed kite (*Elanus leucurus)* to be found in the Planning Area.[10]

Valley Elderberry Longhorn Beetle Habitat Conservation Plan

The City is preparing a Valley Elderberry Longhorn Beetle Habitat Conservation Plan (HCP), in coordination with the United States Fish and Wildlife Service (USFWS), in order to take a comprehensive approach to impact analysis and mitigation, and to apply for an Incidental Take Permit (ITP) for any Valley elderberry longhorn beetle (VELB) that may result from project activities. The ITP term would be for a period of 25 years. A 7.3-acre Conservation Area has already been established and will be protected in perpetuity. This area can be expanded up to approximately 55 acres.[11]

[9] California Natural Diversity Database. April 2007.

[10] California Department of Fish and Game. Response to Notice of Preparation of an EIR: City of Porterville General Plan Update. November 3, 2006.

[11] City of Porterville. Valley Elderberry Longhorn Beetle Habitat Conservation Plan Draft. April 2007.

Figure 6-4

Special Status Species & Sensitive Vegetation

- American Badger
- San Joaquin Kit Fox
- Western Mastiff Bat
- Pallid Bat
- California Condor
- Vernal Pool Fairy Shrimp
- Morrison's Blister Beetle
- Valley Elderberry Longhorn Beetle
- Calico Monkeyflower
- Keck's Checkerbloom
- Madera Leptosiphon
- Northern Claypan Vernal Pool
- San Joaquin Adobe Sunburst
- Spiny-sepaled Button-celery
- Springville Clarkia
- Striped Adobe Lily
- Annual Grassland
- Montane Hardwood
- Valley-foothills Riparian
- Cropland, Orchards, or Vineyards
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other Wetland
- Riverine
- 2006 Urban Development Boundary
- Reserve
- Planning Area

Source: California National Diversity Database, 2007; California GAP Analysis, 1998; USFWS Wetlands Geodatabase, 2007; California Department of Fish and Game, 2007; Sequoia Riverlands Trust, 2007; City of Porterville, 2007

0 1125 2250 4500 9000 FEET

40 acres 10 acres

November 2007

Yaudanchi Ecological Preserve

The 190-acre Yaudanchi Ecological Preserve was established in 1975 to protect a heron and egret rookery. The preserve is owned by the California Department of Developmental Services (DDS) and managed by the Department of Fish and Game (DFG). Even though the rookery has since moved about a mile from the preserve,[12] natural riparian and manmade habitat (a small pond) supports many species including songbirds, raptors, water fowl, bobcats, gray fox and coyote. DFG maintains a small parking lot and nature trail for visitors. DFG has recently partnered with Wild Places, an ecological restoration and education organization, to restore native habitat and remove invasive tree species. This work plus new signage and additional trail maintenance is planned to be completed by 2008.

Great blue heron

Development Affecting Biological Resources

Under General Plan policies, any hillside residential, Resort Residential, or Tule River Corridor development would have to ensure minimal disruption/loss of habitat that could support special status animal species. Natural Communities Conservation Plans (NCCP) will be required for development that would potentially affect sensitive habitat. The Natural Communities Conservation Planning Act allows a process for developing NCCPs under DFG direction. NCCPs provide regional protection of wildlife diversity, while allowing compatible development.

GUIDING POLICY

OSC-G-7 *Protect habitat for special status species, designated under State and federal law.*

IMPLEMENTATION POLICIES

OSC-I-26 Adopt habitat conservation regulations, including requirements and incentives to incorporate natural wildlife habitat features into new development and public landscapes, parks, and other public facilities.

The regulations will require adequate mitigation measures (e.g., selective preservation, replanting, sensitive site planning, etc.) for all development that will adversely impact significant biological resources, consistent with State and federal law.

OSC-I-27 Protect and enhance the natural habitat features of the Tule River and open space corridors within the Planning Area.

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[12] Eric Kleinfelter, Associate Wildlife Biologist. California Department of Fish and Game. Personal communication. May 30, 2007. The new location of the rookery is not mapped.

OSC-I-28 Require protection of sensitive habitat areas and special status species in new development site designs in the following order: 1) avoidance; 2) onsite mitigation, 3) offsite mitigation, and 4) purchase of mitigation credits.

OSC-I-29 Require assessments of biological resources prior to approval of any development within 300 feet of any creeks, sensitive habitat areas, or areas of potential sensitive status species.

The term "special status" species includes species classified as rare and endangered. These priorities are consistent with the California Department of Fish and Game guidelines. When habitat preservation on-site is not feasible (i.e., preserved parcels would be too small to be of any value), then off-site mitigation should occur.

OSC-I-30 Adopt regulations to promote water-conserving landscape plans, including the use of drought tolerant plants.

OSC-I-31 Require, as part of the proposed Tule River Corridor Plan, measures to protect and enhance riparian zones, natural areas and wildlife habitat qualities; and establish and maintain a buffer along the river where development shall not occur, except as part of the parkway enhancement (e.g., trails and bikeways).

For park improvements and commercial recreation (campground) proposals, the City will require a buffer zone along the river in which no grading or construction activities will occur, except as needed for shoreline uses.

OSC-I-32 Identify and protect wildlife movement corridors that serve critical habitats to minimize wildlife-urban conflicts.

OSC-I-33 Protect, revitalize and expand Porterville's urban forest through public education, sensitive regulation, and a long-term financial commitment that is adequate to protect this resource.

OSC-I-34 Continue to require street tree planting in new development and support the City's tree planting fund.

OSC-I-35 Consult with all responsible agencies about wetland and vernal pool habitat potentially affected by development.

This consultation will occur as part of the environmental review process.

OSC-I-36 Establish a "no net loss" policy for wetlands and vernal pools, including credits for land banking and off-site mitigation, and maintain a protection zone around wetlands, riparian corridors, and identified habit areas where development shall not occur, except as part of a parkway enhancement program (e.g., trails and bikeways).

Protection zones will be determined on case-by-case based on biological studies and field assessment.

6.5 WATER RESOURCES

This section addresses surface and groundwater resources. Water quality standards are established and enforced by the State and the Central Valley Regional Water Quality Control Board (RWQCB). Water supply, use, and conservation measures are addressed in Public Utilities Element and the Porterville Urban Water Management Plan. Drainage and flooding hazards in Porterville are addressed in Public Health & Safety Element.

SURFACE WATER

Hydrologic Features & Supply

The Tule River, which flows through the central portion of the Planning, is one of the principal watercourses in Tulare County. Under normal conditions discharge in this River is regulated by Success Dam, located approximately five miles upstream from Porterville. Porter Slough is a natural distributary of the Tule River and flows through the center of Porterville. It originates from the Tule River approximately four miles upstream from the City, and returns to the river approximately 17 miles below its point of origin.

Seven ditch companies divert water from the Tule River and/or Porter Slough at points within the Planning Area: Pioneer, Campbell-Moreland, Porter Slough, Vandalia, Poplar, Hubbs-Miner, and Woods-Central. In addition to delivering water for irrigation, these ditches also provide extra capacity to carry peak flood flows and urban stormwater runoff. The Friant-Kern Canal defines the western edge of the Planning Area. Water in the Canal is imported from the San Joaquin River northeast of Fresno and distributed to the western portion of the Planning Area by the Porterville Irrigation District.

The City is considering purchasing additional surface water from local irrigation and water districts which have water rights on the San Joaquin River and Tule River.

Surface Water Quality

Both San Joaquin and Tule Rivers water sources originate primarily from snowmelt in the Sierra Nevada Mountains and as a result have good to excellent water quality. These water supplies have no restrictions on use for municipal water, but they will require standard water treatment.

Tule River water is delivered from Lake Success. According to the Lower Tule River Irrigation District, the Lake periodically experiences turnover episodes which have caused hydrogen sulfide problems. These turnovers take place in the spring and fall. In the summer and fall, the lake experiences algae growth problems. These problems can be remedied with water treatment.

Additional development in watershed areas may cause some water quality degradation in the San Joaquin and Tule Rivers. However, improved watershed management may prevent further degradation or even improve the water quality. As a result, it is assumed that the quality of these surface water sources will remain good to excellent through the next 25 years.

GROUNDWATER

Groundwater Resources

The Porterville area is part of the Tule Sub-basin of the San Joaquin Valley Groundwater Basin. The area is underlain by an unconfined aquifer which receives groundwater recharge from the Sierra Nevada Mountains and seepage from the Tule River and irrigation ditches. The alluvial fans of the Tule River provide highly permeable areas in which groundwater is readily replenished. Annual rainfall in Porterville usually ranges from eight to 12 inches; however, there is no estimate of what percentage of rainfall reaches the groundwater supply.

Groundwater levels have declined an average of 0.75 feet/year on well hydrographs completed by the Department of Water Resources. In addition, well yields have decreased substantially in the past 10 years. Some City wells have seen capacity reductions from 1,500 gallons per minute (gpm) to 500 or 600 gpm. New wells typically have capacities of 500 gpm or less.

Groundwater Quality

Groundwater quality in the Porterville area is generally good. Groundwater quality and quantity is generally better on the western edge of town, and hence most of the production wells are placed in this area. A few wells have been shut down due to water quality problems. Wells adjacent to Porter Slough have been closed due to percloroethylene (PCE) contamination, and a few wells in the downtown area and eastern portion of town have experienced nitrate problems. In addition, wells in the eastern part of town have nitrate problems (originating from citrus orchards). All active wells produce water that meets State and federal drinking water quality standards. The City does not presently provide treatment for any well water.

Groundwater Management

The Deer Creek and Tule River Authority (DCTRA) is a joint powers authority comprised of five local irrigation districts in the vicinity of Porterville. The DCTRA adopted a new Groundwater Management Plan (GMP) in the summer of 2006. The City may consider becoming a partial or full member of the DCTRA and signatory to the GMP, or the City may develop their own GMP.

GUIDING POLICY

OSC-G-8 *Ensure adequate water quality and supply for the entire Porterville community.*

IMPLEMENTATION POLICIES

OSC-I-37 Establish watershed protection standards and review procedures in the Zoning Ordinance to protect groundwater resources.

These standards may include requirements for water holding areas such as creek beds, recessed athletic fields, ponds, and other features that serve to recharge groundwater, reduce runoff, improve water quality, and decrease flooding.

OSC-I-38 Continue to work with the Central Valley Regional Water Quality Control Board (RWQCB) for short- and long-term solutions for excessive salts in the groundwater, and maintain a valid RWQCB permit for all wastewater treatment operations.

OSC-I-39 Adopt the Regional Water Quality Control Board's policies on soil disturbance activities in order to minimize the disturbance of soil, vegetation, organic debris, and other materials that control runoff.

These policies include:

- *Planning and conducting operations and activities in a manner that will not disturb extensive areas of soil or that will disrupt local drainage;*
- *Promptly reseeding or stabilizing areas where soil is disturbed to prevent erosion;*
- *Establishing restrictions on activities in water protection zones, designated by the U.S. Forest Service and the California Department of Forestry and Fire Protection;*
- *Stabilizing and maintaining the stream flow regimen and apply soil control measures in a timely manner;*
- *Prohibiting organic or earthen material from being discharged into any streams or placed at locations where they can pass into streams in quantities that could impair any beneficial use of the water; and*
- *Regulating operations and activities that cause increased turbidity levels in local streams so that streams are not affected for extended periods or for more than ten percent of the time and operations and activities shall not violate water quality objectives.*

OSC-I-40 Support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

This will be accomplished as part of the groundwater quality and quantity monitoring program.

OSC-I-41 Monitor and enforce provisions to control non-point source water pollution, including storm water flows, contained in the United States Environmental Protection Agency NPDES program as implemented by the Regional Water Quality Control Board.

OSC-I-42 Support the collection of monitoring data for facilities or uses that are potential sources of groundwater pollution as part of project approvals, including residential and industrial development.

OSC-I-43 Work with agricultural and industrial uses to ensure that water contamination and waste products are handled in a manner that protects the long-term viability of water resources.

OSC-I-44 Work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the CEQA review and project approval process) and monitored to ensure long-term compliance.

The City will develop a priority list of businesses that may impact water quality as a result of the services they provide and give recognition to businesses that actively promote activities that reduce or eliminate storm water pollution.

OSC-I-45 Continue to require use of feasible and practical best management practices (BMPs) and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban runoff in coordination with the Regional Water Quality Control Board.

OSC-I-46 Adopt water well standards meeting the requirements of the State with Department of Water Resources.

OSC-I-47 Prepare a Groundwater Management Plan and develop groundwater monitoring programs with federal, State, and local agencies and the private sector to improve local groundwater pollution detection and monitoring.

The Plan will be developed in consultation with the Deer Creek and Tule River Authority.

OSC-I-48 Protect groundwater recharge areas by carefully regulating the type of development within these areas.

Regulations may include limitations on structural coverage and impervious surfaces and prohibition of uses with the potential to discharge harmful pollutants, increase erosion, or create other impacts degrading water quality.

OSC-I-49 Promote the combined use of recharge areas, public recreation, wetland mitigation programs and/or banking, as part of the City's open space or recreational trail system to the extent deemed feasible by good engineering or geotechnical practice.

Such programs may be jointly or individually managed by the City of Porterville.

OSC-I-50 Do not allow new septic systems within the City unless wastewater collection facilities are unavailable and the applicant agrees to connect when permanent facilities are constructed.

OSC-I-51 Prior to the approval of individual projects, require the City Engineer and/or Building Official to verify that the provisions of applicable point source pollution programs have been satisfied.

OSC-I-52 Establish requirements for appropriate Best Management Practices to be implemented during construction efforts to control the discharge of pollutants, prevent sewage spills, and avoid discharge of sediments into streets, storm-water conveyance channels, or waterways.

The use of pervious materials for runoff channels and parking areas shall be encouraged, such as grass or permeable/porous pavement.

OSC-I-53 Require development to retain areas of open space as natural or landscaped to aid in the recharge and retention of runoff.

Use of native and/or drought-tolerant plant materials is encouraged in replanting and hydroseeding operations.

OSC-I-54 Support efforts to create additional water storage where needed, in cooperation with federal, State, and local water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate.

OSC-I-55 Participate in the development, implementation, and maintenance of a program to institute recharge aquifers underlying the Planning Area. The program shall make use of flood and other waters to offset existing and future groundwater pumping.

OSC-I-56 Incorporate natural drainage systems and groundwater recharge features into developments where appropriate and feasible.

These drainage systems and groundwater recharge features shall be reviewed by the City Engineer and/or Building Official prior to the issuance of grading permits.

OSC-I-57 Update the emergency water conservation plan to include appropriate conservation policies that can be implemented during times of water shortages caused by drought, loss of one or more major sources of supply, contamination of one of more sources of supply, or other natural or manmade events.

This update will ensure consistency with the City's Urban Water Management Plan.

6.6 AIR RESOURCES

Porterville is located in the San Joaquin Valley Air Basin (SJVAB). The Air Quality monitoring has been conducted in the SJVAB for the last 15 years. While new and innovative pollution controls has made the San Joaquin Valley Air Pollution Control District (SJVAPCD) a leader in the rate of improvement, the region is not in attainment and the air basin still has poor air quality. Much of this pollution is attributed to the valley's topography, meteorology, and intensive agricultural uses. In 2006, the major sources of air pollution in the San Joaquin Valley were heavy duty trucks, other mobile sources, autos and light trucks, and fuel combustion from stationary sources.[13]

The California Air Resources Board (CARB) operates a regional network of air pollution monitoring stations that provide information on ambient concentrations of criteria air pollutants and toxic air contaminants. In Tulare County, CARB measures certain air pollutants, such as carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), and

[13] San Joaquin Valley Regional Air Pollution Control District, http://www.valleyair.org/General_info/aboutdist.htm. April 16, 2007.

particulate matter less than ten microns in diameter (PM-10). Data is collected at five active air quality stations located in Tulare County. The station closest to Porterville is about 20 miles to the northwest in Visalia on North Church Street.

PHYSICAL SETTING & AIR QUALITY

The SJVAB has an inland Mediterranean climate that is characterized by warm, dry summers and cooler winters. Summer high temperatures often exceed 100 degrees Fahrenheit (°F), averaging from the low 90s in the northern part of the valley to the high 90s in the south. The daily summer temperature variation can be as high as 30 °F. Winters are for the most part mild and humid. Average high temperatures during the winter are in the 50s, while the average daily low temperature is approximately 45 °F.

The vertical dispersion of air pollutants in the valley is limited by the presence of persistent temperature inversions. Air temperatures usually decrease with an increase in altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Air above and below an inversion does not mix because of differences in air density thereby restricting air pollutant dispersal.

Wind speed and direction play an important role in dispersion and transport of air pollutants. During summer periods, winds usually originate from the north end of the San Joaquin Valley and flow in a south-southeasterly direction through the valley, through the Tehachapi Pass and into the neighboring Southeast Desert Air Basin. In the winter months, winds occasionally originate from the south end of the valley and flow in a north-northwesterly direction. Also, during winter months, the valley experiences light, variable winds, less than 10 miles per hour. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of certain air pollutants.

The SJVAB is basically a flat area bordered on the east by the Sierra Nevada Mountains; on the west by the Coast Ranges; and to the south by the Tehachapi Mountains. Airflow in the SJVAB is primarily influenced by marine air that enters through the Carquinez Straits where the San Joaquin-Sacramento Delta empties into the San Francisco Bay. The region's topographic features restrict air movement through and out of the basin. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Frequent transport of pollutants into the SJVAB from upwind sources also contributes to poor air quality.

AIR QUALITY REGULATORY SYSTEM

Federal and State laws require emission control measures in areas where air pollution exceeds standards. The San Joaquin Valley is one of these areas. The federal government, primarily through the Environmental Protection Agency (EPA) and the federal Clean Air Act, sets standards, oversees state and local actions, and implements programs for toxic air pollutants, heavy-duty trucks, locomotives, ships, aircraft, off-road diesel equipment, and some types of industrial equipment. Currently, EPA has established national standards for criteria air pollutants: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); suspended particulate matter (PM-10 and PM-2.5); and lead (Pb).

Pursuant to the California Clean Air Act of 1988, the State government, through CARB and the Bureau of Automotive Repair, set more stringent State standards, oversees local actions, and implements programs for motor vehicle emissions, fuels, and smog checks.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) was established in 1991 to administer local, state, and federal air quality management programs and implement control measures. The SJVAPCD is responsible for developing attainment plans for the San Joaquin Valley Air Basin, for inclusion in California's State Implementation Plan (SIP), as well as establishing and enforcing air pollution control rules and regulations. The attainment plans must demonstrate compliance with federal and State ambient air quality standards, and must first be approved by CARB before inclusion into the SIP. The SJVAPCD regulates, permits, and inspects stationary sources of air pollution.

SJVAPCD also administers the Air Toxics "Hot Spots" Program which involves reviewing new stationary sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing stationary sources of toxic air contaminants, and developing new rules and regulations to reduce toxic air contaminant emissions.

Local cities and counties are responsible for implementing air friendly community planning that promotes pedestrian traffic, commute alternatives and cleaner transit fleets. They can also regulate odors and nuisances and the release of particulate matter at construction sites.

CRITERIA AIR POLLUTANTS

As required by the Federal Clean Air Act passed in 1977, EPA has identified six criteria air pollutants that are pervasive in urban environments and for which State and national health-based ambient air quality standards have been established. EPA identifies these pollutants as criteria air pollutants because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb) are the six criteria air pollutants.

Ozone (O3)

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NOx under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Ground level ozone in conjunction with suspended particulate matter in the atmosphere leads to hazy conditions generally termed as "smog."

Carbon Monoxide (CO)

Carbon monoxide, a colorless and odorless gas, is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High carbon monoxide concentrations develop primarily during winter when periods of light wind combine

with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased carbon monoxide emission rates at low air temperatures. When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Nitrogen Dioxide (NO_2)

Nitrogen dioxide is an air quality concern because it acts a respiratory irritant and is a precursor of ozone. Nitrogen dioxide is produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit.

Sulfur Dioxide (SO_2)

Sulfur dioxide is a combustion product of sulfur or sulfur-containing fuels such as coal and oil, which are restricted in the San Joaquin Valley. Its health effects include breathing problems and may cause permanent damage to lungs. SO_2 is an ingredient in acid rain, which can damage trees, lakes and property, and can also reduce visibility.

Particulate Matter (PM)

PM-10 and PM-2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter). PM-10 and PM-2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles (PM-2.5) of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

PM emissions in the Planning Area are mainly from urban sources, dust suspended by vehicle traffic and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use and meteorological conditions prevent the dispersion of directly emitted contaminants.

Lead (Pb)

Leaded gasoline (which is being phased out), paint (houses, cars), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects for which children are at special risk. Some lead-containing chemicals cause cancer in animals.

AMBIENT AIR QUALITY STANDARDS

Regulation of air pollution is achieved through both national and State ambient air quality standards and emissions limits for individual sources of air pollutants. As required by the Federal Clean Air Act, the EPA has established National Ambient Air Quality Standards (national standards) to protect public health and welfare. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (referred to as State Ambient Air Quality Standards or State standards). In addition, California has established State ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of California's unique meteorological problems, there are considerable differences between State and federal standards currently in effect in California, as shown in Table 6-5. The table also summarizes the related health effects and principal sources for each pollutant.

The ambient air quality standards are intended to protect the public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Table 6-5: State and National Criteria Air Pollutant Standards (2006)

Pollutant	*Averaging Time*	*California Standard*	*National Primary Standard*	*Major Pollutant Sources*	*Pollutant Health and Atmospheric Effects*
Ozone	1 hour	0.09 ppm	---	On-road motor vehicles, other mobile sources, solvent extraction, combustion, industrial and commercial processes.	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.
	8 hours	0.07 ppm	0.08 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide	1 hour	0.25 ppm	---	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.	Irritating to eyes and respiratory tract. Colors atmosphere reddish brown.
	Annual Average	---	0.053 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	---	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.	Irritates upper respiratory tract, injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron and steel. Limits visibility and reduces sunlight.
	24 hours	0.04 ppm	0.14 ppm		
	Annual Average	---	0.03 ppm		
Respirable Particulate Matter (PM_{10})	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).	May irritate eyes and respiratory tract, decreases lung capacity and increases risk of cancer and mortality. Produces haze and limit visibility.
	Annual Average	20 $\mu g/m^3$	50 $\mu g/m^3$		
Fine Particulate Matter ($PM_{2.5}$)	24 hours	---	65 $\mu g/m^3$	Fuel combustion in motor vehicles, equipment and industrial sources; residential and agricultural burning. Also formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	Increases respiratory disease, lung damage, cancer and premature death. Reduces visibility and results in surface soiling.
	Annual Average	12 $\mu g/m^3$	15 $\mu g/m^3$		
Lead	Monthly Average	1.5 $\mu g/m^3$	---	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.
	Quarterly	---	1.5 $\mu g/m^3$		

Note: ppm=parts per million; and $\mu g/m^3$=micrograms per cubic meter
A few of these standards have been updated for 2007. However, the existing conditions for this document are based on 2006. Therefore the 2006 standards are listed here.

Source: California Air Resource Board.

Attainment Status

Under amendments to the Federal Clean Air Act, the EPA has classified air basins or portions thereof, as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. The California Clean Air Act, which is patterned after the Federal Clean Air Act, also requires areas to be designated as "attainment" or "nonattainment" for the State standards. Thus, areas in California have two sets of attainment/nonattainment designations: one set with respect to the national standards and one set with respect to the State standards.

Table 6-6 shows the attainment status of the San Joaquin Valley with respect to the national and State ambient air quality standards for criteria pollutants.

Table 6-6: San Joaquin Valley Attainment Status for Ambient Air Quality Standards

	Attainment Status	
Pollutant	*Federal Standards*	*State Standards*
Ozone – one hour	No Federal Standard	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Serious	No State Standard
PM-10	Nonattainment/Serious	Nonattainment
PM-2.5	Nonattainment	No State Standard
Carbon Monoxide – Tulare County	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide – Tulare County	Unclassified	Attainment
Lead	No Designation	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-Reducing Particles	No Federal Standard	Unclassified

Source: San Joaquin Valley Air Pollution Control District, 2006.

TOXIC AIR CONTAMINANTS

The ambient background of toxic air contaminants (TACs) is the combined result of many diverse human activities, including emissions from gasoline stations, automobiles, dry cleaners, industrial operations, hospital sterilizers, and painting operations.

In 1987, the California State legislature enacted, through Assembly Bill 2588, the Air Toxics Hot Spots Information and Assessment Act, which requires companies in California to provide information to the public about emissions of toxic air contaminants and their possible impact on public health. The SJVAPCD implements this act through the local Air Toxics "Hot Spots" Program. Toxic air contaminants are pollutants that occur at relatively low concentrations and are associated with carcinogenic and other adverse health effects, but for which no ambient air quality standards have been established. Impact is measured as "maximum individual cancer risk" which is the likelihood that a person exposed to concentrations of

TACs over a lifetime will develop cancer. As of 2005, there were no facilities located in the Porterville Planning Area identified as a significant risk.[14]

The Air Resources Board maintains an inventory of toxic air contaminants concentrations and their health risks. Total emissions in the year 2003 from stationary sources of TACs in the San Joaquin Valley included: 1.34 parts per billion (ppb) of acetaldehyde, 0.46 ppb of benzene; 0.10 of ppb of butadiene, 0.10 ppb of carbon tetrachloride, 0.08 ng/m3of chromium, 0.15 ppb of para-dichlorobenzene, 3.02 ppb of formaldehyde, 0.14 ppb of methylene chloride, and 0.03 ppb of perchloroethylene.

The SJVAPCD regulates toxic air contaminants from stationary sources through their permit process. Mobile sources of toxic air contaminants are regulated indirectly through vehicle emissions standards or reactive organic gas (ROG) and through fuel specifications. Cities play a role in reducing public exposure to TACs by enforcing zoning ordinances and ensuring proper buffer zones between stationary sources that emit toxic contaminants and sensitive receptors located down wind.

Asbestos

In 1986, CARB identified asbestos as a TAC based on its classification as a known cancer causing pollutant. In that process, CARB found that no threshold exposure level could be identified below which adverse health effects would not be expected. Asbestos occurs naturally in ultramafic rock (which includes serpentine). When this material is used in unpaved surfacing and disturbed by vehicles and other means, dust containing asbestos can be generated. Serpentine soils have been identified in Tulare County. Figure 7-2 in the Public Health & Safety Element shows areas more likely to contain ultramafic rock. Additional policies addressing asbestos are also in the Public Health & Safety Element.

SENSITIVE RECEPTORS

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Land uses such as schools, children's day care centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress and other air quality-related health problems. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions, and because the presence of pollution detracts from the recreational experience.

[14] San Joaquin Air Pollution Control District, *2005 Annual Report on the District's Air Toxics Program.*

GUIDING POLICY

OSC-G-9 *Improve and protect Porterville's air quality by making air quality a priority in land use and transportation planning and in development review.*

IMPLEMENTATION POLICIES

OSC-I-58 Continue to assess air quality impacts through environmental review and require developers to implement best management practices to reduce air pollutant emissions associated with the construction and operation of development projects.

The City will use the San Joaquin Valley Air Pollution Control District (SJVAPCD) Guidelines for Assessing and Mitigating Air Quality Impacts for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The City shall cooperate with the SJVAPCD in the review of development proposals.

BMPs could include transportation demand management strategies for large development projects such as:

- *Providing bicycle access and parking facilities;*
- *Providing preferential parking for high-occupancy vehicles, carpools, or alternative fuels vehicles;*
- *Establishing telecommuting programs or satellite work centers;*
- *Allowing alternative work schedules;*
- *Subsidizing public transit costs for employee; and*
- *Scheduling deliveries at off-peak traffic periods.*

OSC-I-59 Require preparation of a Health Risk Assessment for any development subject to the Air Toxics "Hot Spots" Act.

OSC-I-60 Require dust control measures as a condition of approval for subdivision maps, site plans, and all grading permits.

OSC-I-61 Coordinate air quality planning efforts with other local, regional and State agencies.

OSC-I-62 Be proactive in educating the public about the linkages between land use, transportation and air quality.

OSC-I-63 Notify local and regional jurisdictions of proposed projects that may affect regional air quality.

OSC-I-64 Investigate replacing City vehicles with low-emission technology.

OSC-I-65 When asbestos has been identified in the preliminary soils report, require all new development and public works projects to comply with all provisions of State and regional ATCM regulations for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.

The City will establish Best Management Practices for construction, grading and road maintenance in areas with naturally-occurring asbestos, consistent with State and regional regulations for Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. BMPs may include but are not limited to:

- *Wetting soil during excavation and other dust suppression measures;*
- *Wetting roads, excavated materials and rinsing equipment;*
- *Limiting vehicle speeds within construction areas;*
- *Creating wind breaks and berms;*
- *Suspending activities when wind creates visible dust;*
- *Prohibiting rock-crushing of asbestos-containing materials;*
- *Monitoring dust levels;*
- *Posting warning signs;*
- *Replanting; and*
- *Paving or other permanent sealants or covers.*

6.7 ENERGY RESOURCES

The City of Porterville depends on energy to maintain a vital economy and desirable lifestyle. It uses electricity and natural gas to light, heat, and cool structures and to power its office equipment, industrial machinery, public services, and home appliances. Porterville also uses petroleum products to move people and products along its transportation corridors.

By reducing the amount of energy consumed in housing, commercial structures, public facilities, and transportation and the energy demand per capita plus using more renewable sources of energy, the environment and public health will be better protected, Porterville's standard of living can be increased, and the cost of new infrastructure to deliver energy to the city will be reduced. Building design standards which recommend better use of materials and insulation, plus solar-oriented site design reduces demand for natural gas and heating products. Transportation and land use measures that support transit and facilitate walking and bicycling reduce dependence on fossil fuels. Together, these steps will lead to a more sustainable energy future.

In addition to the policies below, land use and circulation policies in this General Plan contribute to the goals of reducing energy consumption and per capita energy use.

GUIDING POLICY

OSC-G-10 *Reduce and conserve energy use in existing and new commercial, industrial, and public structures.*

IMPLEMENTATION POLICIES

OSC-I-66 Adopt guidelines and incentives for using green building standards in new construction.

Green building design guidelines may include required and recommended "green" design and construction strategies including: Building Site and Form, Natural Heating or Cooling, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Construction Management, and Commissioning.

OSC-I-67 Incorporate cost-effective energy conservation measures into all building programs owned by the City, including construction, operations, and maintenance.

Strategies will include conducting periodic energy audits of public buildings.

OSC-I-68 Publish best practices guide to saving energy on the City's website and other City publications.

OSC-I-69 Establish regulations to allow flexibility in site planning, solar orientation, roof design, and landscaping to decrease summer cooling and winter heating needs.

OSC-I-70 Ensure City codes allow for environmentally acceptable alternative forms of energy production and green building techniques.

6.8 CULTURAL RESOURCES

One of the General Plan initiatives is to protect community assets, including sites with historic, archeological or paleontological significance. The lands encompassed by the Planning Area have a long and rich history of human habitation, including primarily the Koyete Indian sub-tribe, the Yokuts. Archeological evidence of pre-historic cultures has been documented. A large inventory of historic homes and buildings provide a visual history of the development of the City from its first modern settlement to today. The existence of both archaeologically sensitive areas and historic buildings in Porterville underscores the need for policies that preserve such aspects of the City's heritage.

Several State laws, most notably the California Environmental Quality Act (CEQA), protect archaeological and historical resources. To preserve historic resources, the State has formed the State Historical Resources Committee that conducts the State Historic Resource Inventory and maintains the California Register of Historic Resources, which identifies historic landmarks and points of interest. The Committee also provides recommendations for the National Register of Historic Places.

ARCHAEOLOGICAL RESOURCES

According to the Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield, 45 archaeological sites have been documented within the Porterville Planning Area.[15] The main village of the Yokuts, Chokowisho, was located near Murry Hill north of Porter Slough until the mid-1850s. The Rocky Hill area contains numerous rock art and bedrock mortar sites, not all of which have been officially recorded. Most are these sites are from the prehistoric era and contain bedrock mortars, rock art (i.e. petroglyphs, or pictographs), human burials, village complexes, midden[16], and artifacts (i.e. projectile points, pestles, pottery, etc). There are no archaeological sites currently listed on the National Register of Historic Places.

The Yokuts village of Trawoiu (P-54-000313) contained human remains, bedrock mortars, pictographs, artifacts and extensive midden. Archaeologists considered this to be a very important site and recommended that it be protected. The site was compromised when the landowner constructed a dam which inundated the site.

PALEONTOLOGICAL RESOURCES

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried. Fossil remains are considered to be important as they provide indicators of the earth's chronology and history. These resources are afforded protection under CEQA and are considered to be limited and nonrenewable, and they provide invaluable scientific and educational data.

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[15] The Northwest Information Center does not provide maps showing specific locations in order to protect these sites from looting.

[16] A mound or deposit containing shells, animal bones, and other refuse that indicates the site of a human settlement.

The University of California Museum of Paleontology lists 25 localities where fossils have been found in Tulare County. However, due to the sensitive nature of these sites, they are not mapped.[17] Identified fossil types in the County include prehistoric mammals, other vertebrates, invertebrates and plants.

HISTORIC RESOURCES

Many of the historic resources in Porterville, which date back to the days of its founding in the late 1800s, are located near Downtown. The City's historic buildings reflect its changing role through time as a center of agriculture and commercial activities.

In 1986, the City of Porterville conducted a comprehensive inventory of sites and districts with potential historic significance. This inventory included an assessment of 337 individual residences and 89 "special" structures and sites, including churches, schools, museums, government, and commercial properties. The final evaluation process produced an inventory of 75 sites that may have eligibility for National Register designation. However, these properties are not currently listed on the National Register. According to the Southern San Joaquin Valley Archeological Information Center, many more properties have potential to also be listed in the national and state registries if they were formally evaluated or re-evaluated.

In total, the Porterville Planning Area contains four National Register Sites and two California Historic Landmarks. Five of the six historic sites are shown in Figure 6-5.

National Register Sites

The Zalud House is listed in the National Historical Registry of Old Houses and in the National Register of Historic Places. Built in 1891, its unique Second Empire architecture and long family residence makes this a significant local historic resource. It is now a museum operated by the City's Department of Parks and Leisure Services.

The Porterville Main U.S. Post Office, built in 1933, was placed on the National Register in 1995 for its distinctive art deco architecture. It still functions as a Post Office.

The First Congregational Church, also known as the United Church of Christ, was placed on the National Register in 1999 for architecture and its role in local social history. It was built in 1909.

First Congregational Church (1909)

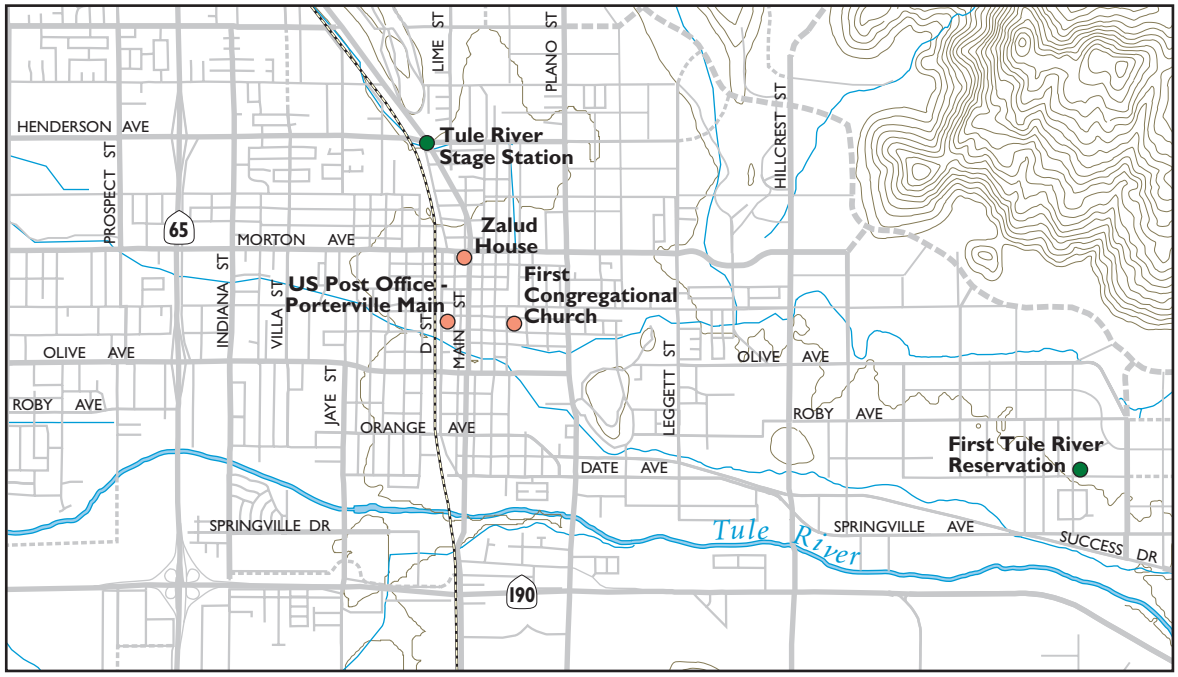
The address for Tenalu or the Walter Richardson House has been restricted. It was added to the National Register in 1986 because it was designed by Henry Greene of Greene & Greene Architects in 1929.

[17] University of California Museum of Paleontology, http://ucmpdb.berkeley.edu/loc.html. May 25, 2007.

California Historic Landmarks

The Tule River Stage Station (California Historic Landmark #473), located at the intersection of North Main Street and West Henderson Avenue, represents an emigrant trail stopping place on the bank of the Tule River from 1854 until the river changed its course in 1862. It was a Butterfield Overland Mail stage station between 1858 and 1861. R. Porter Putnam, who founded Porterville in 1864, operated the station between 1860 and 1862.

The First Tule River Reservation (California Historic Landmark #388) was originally established in 1857. The marker is located at the Alta Vista School at 2293 E. Crabtree Avenue. Native Americans from a widespread area were brought here. The local Native Americans, the Koyeti Tribe towards the west and the Yandanchi Tribe toward the east, were branches of the Yokuts Indians that occupied the San Joaquin Valley. The Tule River Indian Reservation was moved in 1873 to its present location, 10 miles east southeast of Porterville. Although the current reservation boundaries are located outside the Planning Area, designated Tribal Land Sites, including numerous bridges, dams, canals, and historic roads, are situated within the Planning Area.



Source: National Park Service, April 15, 2003

Figure 6-5
Historic Sites

GUIDING POLICY

OSC-G-11 Identify and protect archaeological, paleontological, and historic resources.

IMPLEMENTATION POLICIES

OSC-I-71 Update the City's inventory of historic resources to determine sites or buildings of federal, State, or local historic significance.

OSC-I-72 Develop an agreement with Native American representatives for consultation in the cases where new development may result in disturbance to Native American sites.

OSC-I-73 Require that new development analyze and avoid any potential impacts to archaeological, paleontological, and historic resources by:

- Requiring a records review for development proposed in areas that are considered archaeologically sensitive, including hillsides and near the Tule River;
- Studying the potential effects of development and construction (as required by CEQA);
- Developing, where appropriate, mitigation measures to minimize potential impacts; and
- Implementing appropriate measures to avoid the identified impacts.

In the event that historical or archaeological resources are accidentally discovered during construction, the City will require that grading activity in the immediate area cease. A qualified archaeologist will then be required to make an immediate evaluation and recommend avoidance measures or appropriate mitigation.