14.0 PUBLIC SERVICES AND UTILITIES

14.1 LAW ENFORCEMENT

The Paradise Police Department has provided law enforcement for the Town of Paradise since 1980, when it took over law enforcement responsibility for the area from the Butte County Sheriff's Department. The police station is located at 5595 Black Olive Drive, adjacent to the main fire station. Dispatching of police, fire and ambulance units is done by the town. The department maintains a mutual aid agreement with the Sheriff's Department. As of March 1991, there were twenty-two sworn personnel and one reserve officer who patrol two beats. The current ratio of sworn personnel to population is one of the lowest in the state (approximately one officer per 1,200 citizens). According to the state Department of Justice, the statewide average in 1989 was approximately one officer for 500 citizens, while the City of Chico maintains one officer for approximately 650 citizens. The department's typical response time for routine calls is four to five minutes.

Although the town's higher percentage of senior citizens contributes to a lower than average crime rate, the absolute number of calls and residents' expectations of service are relatively high. The manufacture and sale of narcotics poses a problem due to the town's remoteness and the difficulty of observing individual properties because of the hilly and forested terrain.

Law enforcement in the unincorporated area surrounding the town is the responsibility of the Butte County Sheriff's Department, and is provided out of a substation in Paradise Pines. Coroner's service is provided throughout the county by the Sheriff's Department. The California Highway Patrol polices State Highway 191 out of their Chico and Oroville substations.

14.2 FIRE PROTECTION

The Paradise Fire Department provides fire protection and emergency services within the town limits and has a mutual aid agreement with the Butte County Fire Department. The department's service area includes all lands within the town limits. Upon incorporation of the Town of Paradise, the Paradise Fire Protection District was dissolved.

The department presently operates out of three fire stations, each with a designated response zone. Station 1 is located at 767 Birch Street, adjacent to the police station. The other two stations are located at the intersection of Wagstaff Road and Harvey Road, and at the intersection of Pearson Road/Newland Road and South Libby Road. As of March 1991, the department has twenty-seven authorized positions and twenty-one volunteers. The Police Chief is currently the acting Fire Chief, and has assumed the position of town Public Services Director. The department's average response time is two to two-and-one-half minutes.

The town Police Department dispatches ambulances and fire units in response to medical emergencies. Ambulance service is provided by Paradise Ambulance Service, a private service supervised by the Feather River Hospital Emergency Room. Both the ambulance and the fire units are staffed by paramedics.

The Town Council has considered contracting with the California Department of Forestry and Fire Protection (CDF) for fire protection services, rather than operating its own department, as a cost-saving measure. Fire Department employees would have become CDF employees if the Council had approved the contract arrangement. However, the Council has decided to maintain the Fire Department at this time.

Fire hydrants are owned by the town and maintained by the Paradise Irrigation District. Butte County, which contracts with CDF, provides fire protection services in the unincorporated portions of the study area. The county operates two fire stations in the study area, one in the Town of Paradise and one in Magalia.

Wildland Fire Potential and High Fire Risk Areas

Large areas within the Town of Paradise, as well as the secondary and tertiary study area, are subject to wildland fire potential. Typically, such areas pose a substantial fire risk to dwellings and other structures, as evidenced by the recent 49er fire in Placer and Nevada Counties, and the even more recent Oakland Hills disaster. Clearly, such areas pose great risk when people choose to live in them in large numbers. Despite this risk, such areas are typically viewed as attractive places to reside. It is important that fire risk and planning for fire safety play an important role when considering residential development in such areas. The *Multihazard Disaster Plan* has identified areas of particular concern for wildland fire:

- Country Club Drive
- West side of lower Skyway
- Butte Creek Canyon
- West Branch Canyon
- Nance Canyon
- Hamlin Canyon
- Berry Creek Canyon
- Little Clear Creek Canyon
- Clear Creek Canyon
- Horse Thief Canyon
- Dry Creek Canyon

Fire hazard severity zones have been mapped for the state responsibility area (SRA) around the Town of Paradise (see Figure 14-1). All of the secondary study area, and most of the tertiary study area, are within areas rated "high" or "very high." Fire hazard severity zones are intended to show relatively homogeneous areas and are based on fuel loading, slope, fire weather and other factors. The state Board of Forestry has adopted fire safety regulations which apply to the SRA and which require certain minimum fire safety measures within these areas. Outside the SRA, risks are more typical in nature and do not pose any unusual constraints to development, assuming that adequate fire service is in place and that standards for development take fire safety into consideration.

According to the Paradise *Multihazard Disaster Plan*, the possibility of major urban fires exists primarily within the built up areas of the downtown commercial areas of Paradise. This would pose major problems in the event that evacuation is necessary. All of these structures present a variety in type of construction, occupant load and fire potential.

Peakload Water Supply Requirements

In order to have effective fire suppression capability, it is necessary to have an adequate and reliable supply of water. As shown on Figure 14-3, the Town of Paradise and all but the most northerly portion of the secondary study area are served by one of the water districts or companies described in Section 14.8 below. Generally speaking, these systems have adequate line size and hydrants for fire suppression purposes; however, fire flow quantity may vary considerably from area to area, depending on the immediate water main size. The town's Fire Department has identified various fire flow deficiencies in the community. Water must be pumped to portions of the service area at higher elevations. The capital improvement program for the Paradise Irrigation District includes an accelerated pipeline replacement program to correct existing inadequacies, as described in Section 14.8 below.

According to the Paradise *Multihazard Disaster Plan*, municipal water systems are able to support large fire flows in the commercial areas, but not in the wildlands. The town is served by a forty-two inch PID water main. If ruptured, the town has approximately a one-day reserve; however, drought conditions would seriously disrupt these capabilities.

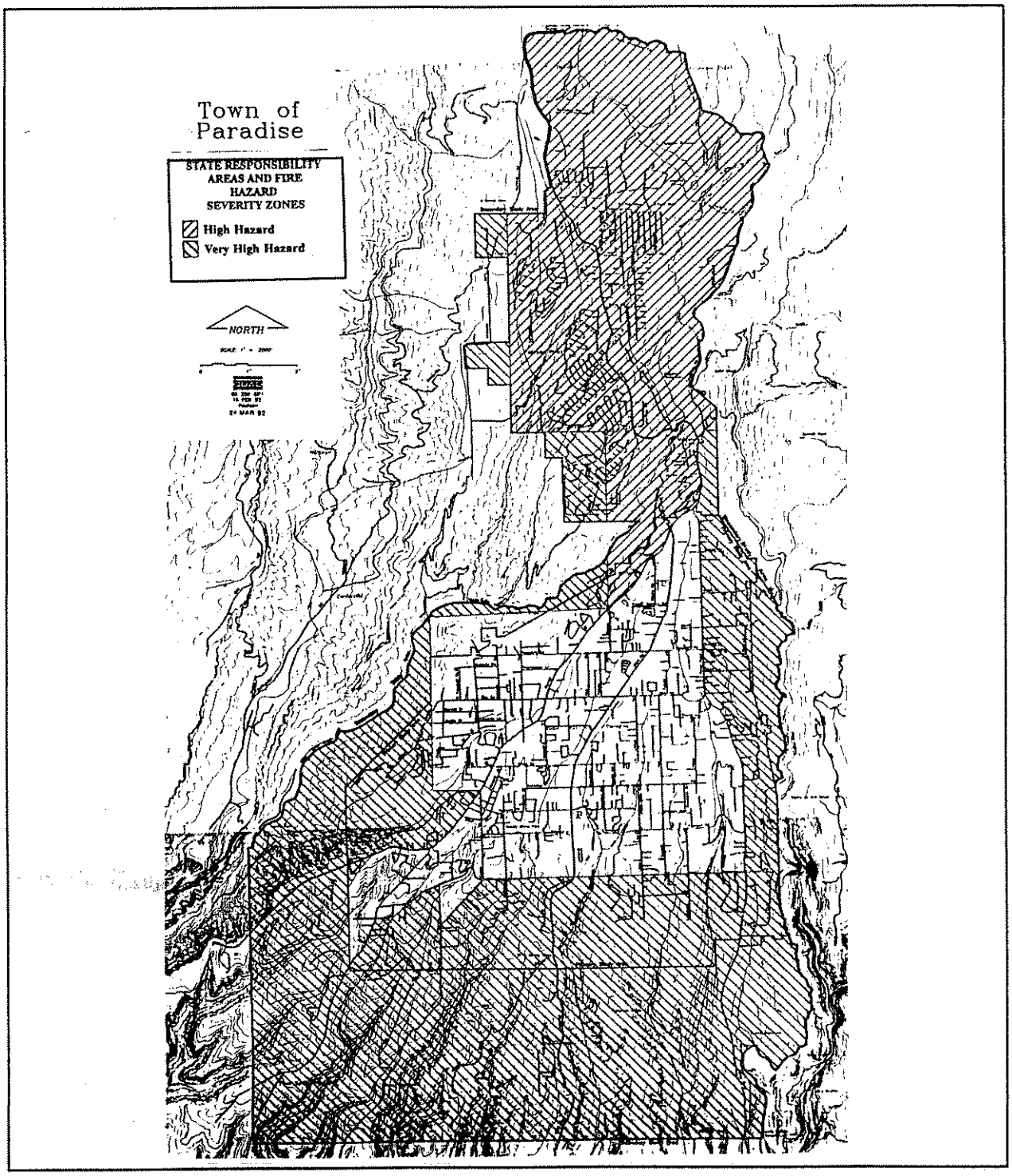
The town currently requires that each lot or unit within a subdivision have adequate water for domestic use. However, the subdivision ordinance does not require hookup to an existing system, and does not establish fire flow standards.

In the unincorporated area of Butte County, the type and size of the project dictates the county Fire Department requirements for water, as established in the Butte County improvement standards. Requirements range from a pressurized water system to a static water supply system. The county's fire flow requirements are included in the improvement standards and vary by lot density.

In addition to town or county standards for new systems, the state Public Utilities Commission (PUC) establishes minimum standards for systems not operated by a public entity. These standards are found in PUC General Order 103 and also apply to existing systems that may not meet current requirements; however, compliance is only required when new hookups, modifications or extensions of systems are proposed.

Road Widths and Access

The Town of Paradise subdivision ordinance requires all access easements or rights-of-way to be fifty feet in width, except for those which serve four or fewer lots. However, subdivision applicants may request widths of less than fifty feet for privately maintained roads. They must connect, via private roads if necessary, with a publicly-maintained street. Maximum cul-de-sac length is 1,800 feet.



STATE RESPONSIBILITY AREAS AND HAZARD SEVERITY ZONES **FIGURE 14-1**

14.3 SOLID WASTE DISPOSAL

Solid waste collection and disposal in the Town of Paradise is provided by four independent haulers and is not mandatory. Recycling services are provided through various sources, both by private commercial haulers, nonprofit organizations and independent for profit recyclers. Yard waste is commonly disposed of by burning, and some residents dispose of their own refuse by hauling it to the landfill on an individual basis. Paradise generates approximately 30,398 tons per year of residential and industrial waste (Preliminary Draft *Source Reduction and Recycling Elements*, 1991).

The Neal Road Landfill, the only landfill for disposal of municipal waste in Butte County, is located on the north side of Neal Road, within the tertiary study area, and is operated by the Neal Road Landfill Company. It is a Class 3 landfill (no hazardous materials) and is anticipated to reach capacity by mid 1999. A new county disposal facility will need to be developed to meet the disposal needs of the county. The City of Chico has the only permitted composting facility in the Butte County area, and the cities of Chico and Oroville have significant recycling operations including redemption and drop off centers, commercial collection and wood waste processors.

AB 939, the Solid Waste Management Act of 1989, established the requirement for every city and county in the state to develop comprehensive plans for the implementation of programs and policies to reduce, recycle or otherwise divert from landfill disposal twenty-five percent of the solid waste stream by 1995 and fifty percent by 2000. These plans include the city and county *Source Reduction and Recycling Elements* and *Household Hazardous Waste Elements* as well as a countywide *Siting Element*. All of these elements are to be incorporated into a countywide *Integrated Waste Management Plan* by January 1, 1994.

The town is currently considering revisions to its solid waste management ordinances that would establish a town-wide roadside (curbside) recycling program, a chipping/composting program and mandatory solid waste collection for the residential, commercial and industrial sectors. The *Source Reduction and Recycling Elements* call for the establishment of a centralized permitted composting facility to be developed in Butte County by 1995. The actual siting for this proposed facility is not yet determined. The *Household Hazardous Waste Element* calls for the development of a household hazardous waste drop off center within three years. A permanent household hazardous waste collection facility is proposed to be developed by Paradise Solid Waste Systems, Inc., a private local company, at their facility to serve the needs of the town.

14.4 UTILITIES

Pacific Gas and Electric Company provides electricity in the study area and natural gas within the town and some outlying areas. Two high voltage electrical transmission lines cross the tertiary study area, near Highway 99. Electrical energy comes from a variety of sources and Pacific Gas and Electric Company foresees no problems in meeting future demand. Telephone service is provided to the study area by Pacific Bell. Propane is utilized for heating in some areas outside the town limits.

14.5 HEALTH SERVICES

The Town of Paradise is well-served with doctors, other medical practitioners and facilities. Feather River Hospital, a private hospital, is the largest employer in the Town of Paradise. It provides general acute-care service in a 109-bed facility located at 5974 Pentz Road. The hospital offers cardiopulmonary services, intensive coronary care, maternity care, surgical services and twenty-four hour emergency treatment. In addition, the hospital's discharge planning and social services department provides senior and support services for patients. Hospital expansion plans include the obstetrical unit, enlarging the operating room and additional beds for outpatient services.

Other facilities offering treatment in the Paradise area include:

- Alcohol and Chemical Recovery Program
- Feather River Home Health Agency
- Feather River Physical Rehabilitation Center
- Paradise Mammography Center
- New West Dialysis Clinic
- Paradise Adult Day Care
- Alzheimers Disease Center

There are three skilled nursing facilities located in Paradise and over fifty residential care facilities.

Residents typically travel to Chico and elsewhere for certain specialized services including severe burns, heart surgery, neurological treatment, severe trauma and psychiatric care.

14.6 SCHOOLS

The Paradise Unified School District (PUSD) provides public elementary and secondary education within the Town of Paradise, north to the Tehama and Plumas County boundaries, and within the secondary study area boundaries (please refer to Figure 14-2). The tertiary study area is served by the Chico Unified School District and the Durham Unified School District.

PUSD operates four elementary schools, one intermediate school, and two high schools. Two of the elementary schools (Paradise Elementary and Ponderosa Elementary), Paradise Intermediate and Paradise High School are located within the Town of Paradise. According to a *Site Selection Study* for a new elementary school prepared for PUSD in October 1989, enrollment at each of the elementary schools, with the exception of Brakebill Elementary (located in Stirling City), exceeded capacity. A more recent study, *Facility Needs and Funding Analysis* (March 1991), indicates that Pines Elementary is at capacity (see Table 14-1). With Paradise Elementary on year-round education (YRE), its capacity exceeds its current enrollment. Enrollment exceeds capacity at Paradise Intermediate School, but additional capacity exists at Paradise High School.

As stated in the *Site Selection Study*, "The rate of enrollment and the net increase in number of students has increased district-wide through the late 1980s. For grades K-6, enrollment has increased at an average annual rate of 5.87 percent from 1985-89. This growth rate is likely to continue through the 1990s." The study further states that "...enrollment is roughly proportional by grade, however, there is a slightly higher percentage of students in elementary school and most notably in kindergarten," which implies that the growth trend will continue. Please refer to Table 14-2 for district enrollment, 1978-79 through 1990. The 1991 study reports that the district has been experiencing enrollment growth of approximately 3.5 percent annually; however, as is indicated in the table, the actual change varies from year to year. Although some years have shown decreases, the average rate of increase from 1986-87 through 1990-91 was 3.29 percent.

One of the two elementary schools located in the town, Paradise Elementary, currently operates on a year-round schedule, and Ponderosa Elementary is proposed for a year-round schedule in 1991-92. The district owns another school site in the Upper Ridge, and plans to build a new school as soon as possible (probably a middle school). The district collects developer impact fees from building permit applications to apply to land acquisition and new construction costs.

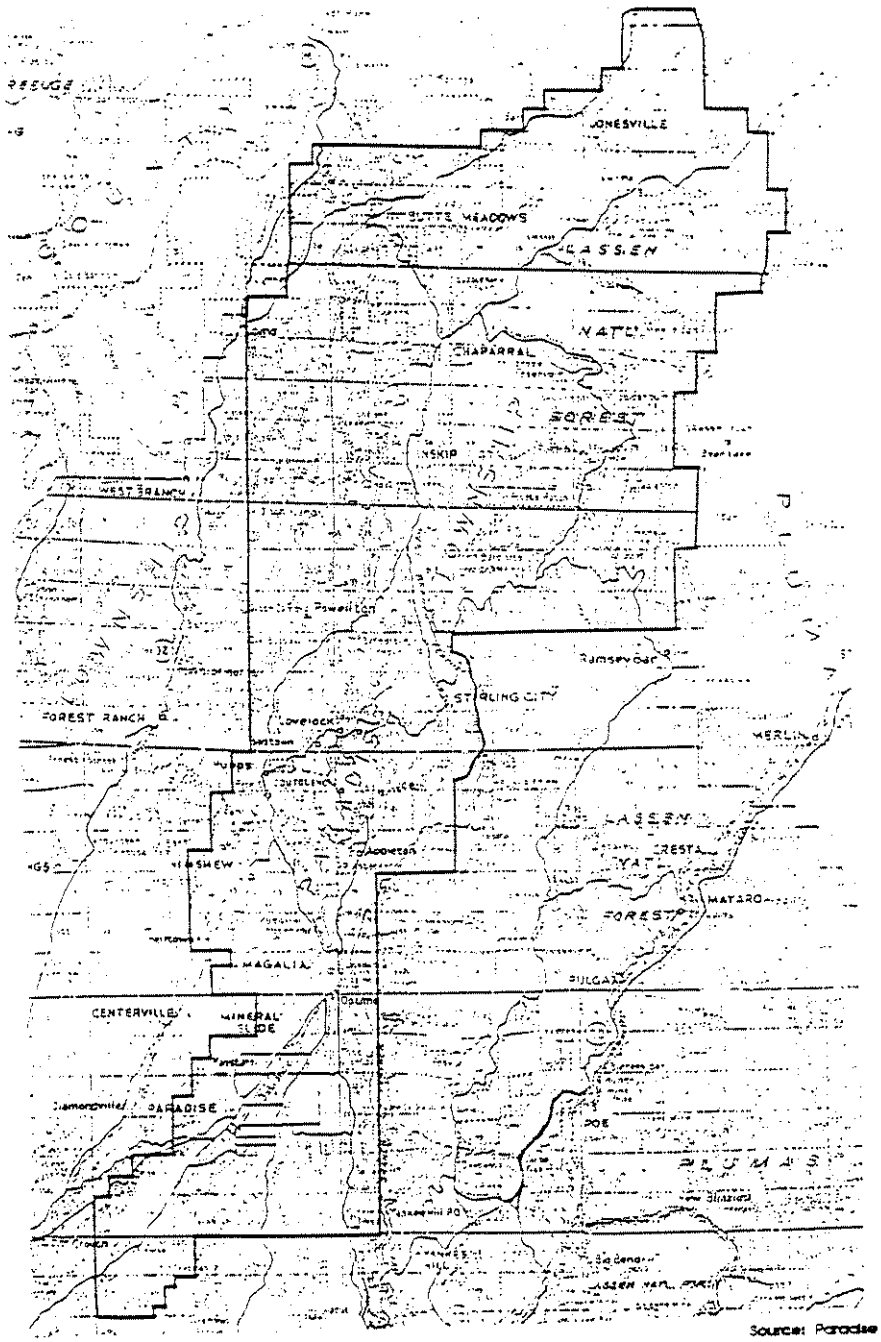
In 1981, the district adopted the following criteria to guide planning for new sites and buildings:

- educational needs of students
- proximity of students to school plants
- safety of students
- ages of students served
- nature of the educational program
- racial and ethnic balance

In addition to these criteria, the following criteria were used in the 1989 *Site Selection Study*:

- proximity to centers of growth
- site accessibility
- site topography
- adjacent residential development
- land size, minimum of eight-ten acres, single parcel
- opportunity for joint use
- possible hazards - power lines, gas transmission lines, water hazards
- available services

The study area is located within the Butte Community College District, and Butte College is located along Highway 191 within the tertiary study area. The college has recently prepared a preliminary ten-year plan which includes new construction on the campus and a permanent Chico center. Proposed new on-campus facilities include new classroom and office buildings, an expanded tutoring center, a child care center and a "little theater."



Source: Paradise Unified School District

NOT TO SCALE

PARADISE UNIFIED SCHOOL DISTRICT BOUNDARIES **FIGURE 14-2**

TABLE 14-1
PARADISE UNIFIED SCHOOL DISTRICT
DISTRICT ENROLLMENT 1978-79 THROUGH 1989

SCHOOL	ENROLLMENT	CAPACITY	UNUSED CAPACITY
Elementary Schools			
Pines Elementary	632	632	0
H Brakebill	80	117	37
Ponderosa	1,047	1,029	(18)
Paradise (on YRE)	983	1,300	317
TOTAL ELEMENTARY	**2,742**	**3,078**	**336**
Intermediate School			
Paradise Intermediate	**682**	**603**	**(79)**
High School			
Paradise High School	**1,081**	**1,192**	**111**
TOTAL	**4,505**	**4,873**	**368**

Source: Paradise Unified School District, *Facility Needs and Funding Analysis*, March 1991.

TABLE 14-2
PARADISE UNIFIED SCHOOL DISTRICT
DISTRICT ENROLLMENT 1978-79 THROUGH 1990

School Year	Enrollment	Net Change	Percent Change
1990-91	4,674	161	+3.56
1989-90	4,513	201	+4.66
1988-89	4,312	131	+3.13
1987-88	4,181	135	+3.33
1986-87	4,046	57	+1.43
1985-86	3,989	140	+3.64
1984-85	3,849	43	+1.13
1983-84	3,806	-24	-0.63
1982-83	3,830	80	+2.13
1981-82	3,750	76	+2.07
1980-81	3,674	-16	-0.04
1979-80	3,690	127	+3.56
1978-79	3,563		

Source: Paradise Unified School District, September 1989; Wade Associates; March 1991, Shilts Consultants, Inc.

14.7 PARKS AND RECREATION

Parks and recreation services are provided by the Paradise Recreation and Park District, a special district established in 1948. The district encompasses 169 square miles, including the Upper and Lower Ridge and the Town of Paradise. The district boundaries extend beyond the *General Plan* study area. The district, as well as other entities own, operate and maintain the facilities described in Table 14-3 containing approximately 415 acres. The district also operates numerous recreational services including programs for senior citizens, adult sports, teens, youth and children's programs and aquatics.

The district receives revenues from property taxes, impact fees ("Quimby" fees, which are imposed upon all subdivision and parcel maps) required by the Town of Paradise, fees for recreational programs, and grants (primarily from state park bond funds). The town subdivision ordinance requires that, as a condition of approval of a final subdivision or parcel map, the subdivider must dedicate land, pay an in-lieu fee, or both, at the option of the town and the recreation and park district, based on the formula contained in the ordinance. The ordinance is based upon a standard of three acres of park land per 1,000 population. The draft Butte County *Energy, Natural Resources and Recreation Element* proposes to establish Quimby fees in the unincorporated area.

The district operates several facilities in cooperation with the Paradise Unified School District, and makes facilities such as the swimming pool available for use by the schools. Current recreation and park district projects include improvements to Paul Byrne Park and Bille Park. Some of the identified recreational needs include a second pool, two additional lighted softball diamonds and additional soccer practice and play fields. In addition to providing youth activities, the district is also one of the largest employers of youth in the community.

State and federal parks and facilities are also used by residents of the study area. These facilities are listed in Table 14-4. In addition to the parks and facilities listed in Tables 14-3 and 14-4, there are a number of public and private trails which are used by the public for walking, jogging, bicycle and horseback riding. These trails are listed in Table 14-5.

TABLE 14-3
PARK AND RECREATION FACILITIES

PARK	TYPE OF LAND	FUTURE PLANS	DESCRIPTION
Bille Park	Bille Park contains definite evidence of Indian inhabitation		Located on the west end of Bille Road in Paradise, this fifty-four acre day-use facility contains both group and individual picnic areas, barbecues, children's play equipment, a hiking trail, restrooms, water and electricity (will accommodate 100 people)
Coutolenc Park	320 acres of unimproved land with public access for hiking.		This park is located on Coutolenc Road 2.5 miles north of the Skyway. The archery club uses portions of the park to operate an archery range.
Crain Memorial Park	Six-acre facility		Located near the Concow Reservoir, this facility contains picnic tables, chemical toilets, and open areas for softball
Aquatic Park and Rotary Grove Park	Three-acre facility		Located on Buschmann Road in Paradise, this facility contains a swimming pool, fishing pond for ages twelve and under, picnic areas, barbecue facilities, ball sports area in joint use with Paradise Intermediate School, children's play equipment, volleyball court, restrooms and parking
Ball Parks			Located on Moore Road in Paradise, this facility contains two lighted ball parks, children's play equipment, a fenced riding area, horse arena, picnic tables and restrooms

PARK	TYPE OF LAND	FUTURE PLANS	DESCRIPTION
Recreation Center	This is a 2.5 acre facility		Located at 6626 Skyway in Paradise, this facility serves as a community center that includes a kitchen, meeting rooms, offices and indoor restrooms. Outside facilities include a volleyball court, basketball court, a horseshoe pit, children's play equipment, picnic tables, a gazebo and outdoor restrooms.
Paradise Reservoir	This is a reservoir area maintained by the Paradise Irrigation District. The water shed area is 8.3 square miles, with 11,500 acre feet of water, and a shoreline of 7.5 miles.		Located on North Lake Road, this area provides shoreline fishing in designated area. Boating is restricted to row boats, canoes and boats propelled by electric trolling motors. Swimming and overnight camping are prohibited. There are twelve picnic tables, two sets of toilets and children's play equipment on the grounds.
~~Rifle range~~			~~Located three miles north of Skyway on Coutolenc Road, it is co-sponsored by the Paradise Rod and Gun Club.~~
Little League baseball diamonds		Future additions to this facility include a second baseball diamond, a snack bar, restrooms and fourteen poles of light (seven on each field) for night games.	Located at Buschmann Road and Recreation Drive in Paradise, this facility currently has one baseball diamond and a snack bar.
Paradise Memorial Park	This is a 0.5 acre facility		Located at Pearson Road and Mallan Lane, this facility is a picnic area for group and organization use. it accommodated up to 125 people.

Source: Paradise Recreation and Park District, 1993.

TABLE 14-4
STATE AND FEDERAL PARKS AND RECREATIONAL FACILITIES WITHIN ONE HOUR DRIVING DISTANCE OF PARADISE

STATE RECREATION AREAS	FEDERAL FACILITIES
Lake Oroville SRA	Plumas National Forest Campgrounds and Recreational Sites
Loafer Creek	Rogers Cow Camp
Bidwell Canyon	Milsap Bar
Kelly Ridge Visitor Center Complex	Bald Rock
Spillway Ramp	Plumas National Forest Ranger Station
Thermalito Forebay North Area	Lewis Flat
Thermalito Forebay South Area	Shady Rest (P.G. & E.)
Lake Oroville SRA Headquarters	Feather Falls Overlook
Lake Oroville SRA Boat-in Camps	Lassen National Forest Campgrounds and Recreation Sites
Goat Ranch	Cherry Hill Campground
Craig Saddle	Philbrook Campground
Foreman Point	West Branch Campground
Bloomer Point	Butte Meadows Campground
Bloomer Knoll	Soda Springs Campground
Bloomer Cove	
Bloomer Group Camp	
Bidwell Mansion State Historic Park	
Sacramento River Park	
Gianelli Bridge, Sacramento River, Highway 32	
Gray Lodge Wildlife Refuge, southwest of Gridley	
Oroville State Wildlife Area	

Source: 1982 Paradise General Plan; Draft Butte County Energy, Natural Resources, and Recreation Element, 1989.

TABLE 14-5
TRAILS

TRAIL	DESCRIPTION
Paradise Memorial Trailway	This trail runs on former SPRR right-of-way from Neal Road on the south to beyond the town limits on the north. Presently, it is paved from Fir Street to Wagstaff. Its purpose is to be the main route for nonmotorized access through the town, and will accommodate pedestrian, bicycle and equestrian use.
Rivendell Lane/Rodgers Trail and Wildlife Sanctuary	This trail is privately owned and is not open for public use.
Bille Park Trail	Located in Bille Park, this trail provides a walk by a water grotto, past a large Indian grindstone, towards a vista bluff that overlooks Butte Creek Canyon.
Town Trail	This trail starts at the end of Circle Lane in south Paradise and runs west toward Clear Creek and east toward Dry Creek.
Chrome Mine Trail	Located outside the town limits, this trail runs from Middle Butte Creek to the former chrome mine just south of Aurora Court in Paradise Pines.
Paradise Reservoir Trail	Also outside the town limits, this trail starts east of Paradise Reservoir Dam and runs around the lake to a point 2.6 miles north of North Lake Road.
Ponderosa Way Trail	This trail runs along the Ponderosa Road cut to Nimshew Ridge Road.
Merchants Bar Road Trail	This trail runs along Merchants Bar Road to Merchants Bar at Little West Branch of the Feather River.
Magalia Dam Trail	This trail runs on the east side of the Little Butte Creek.
Valley Ridge Trail and Valley View Trail	Both these trails have been acquired as roadway and no longer exit.

Source: Town of Paradise, 1991.

14.8 WATER SERVICE

The primary and secondary study areas are served by two water purveyors: Paradise Irrigation District and Del Oro Water Company. Of these, Paradise Irrigation District is the major supplier, with approximately 9,802 service connections serving about ninety-five percent of the incorporated town. Del Oro Water Company serves Paradise Pines district, a large unincorporated, rural residential community immediately north of Paradise, with a population of approximately 9,000, and Magalia District (a county water district recently acquired by the Del Oro Water Company), serving about 400 acres between Paradise Pines and the Town of Paradise, and providing water to approximately 300 households and fifteen businesses. It also serves the Lime Saddle District, 2,750 acres extending south from the Town of Paradise to Lake Oroville. A small urbanized area of the Lime Saddle District has been annexed to the Town of Paradise; it is an urbanizing district with planned service to more than 1,000 homes (see Figure 14-3 for water purveyor boundaries).

Paradise Irrigation District

The district obtains its water from a series of two reservoirs on Little Butte Creek (Magalia Reservoir and Paradise Reservoir). The reservoir system has a storage capacity of 14,140 acre feet, and the firm annual yield is calculated at 7,860 acre feet. Water is transported to the town through a single transmission line. Distribution lines, booster pumps and surface-level tank reservoirs serve various pressure zones throughout the town. Calculated per capita water usage has varied since 1980 from 245 to 289 gallons per day.

The Paradise Irrigation District staff indicates that the district must, subject to voter financing approvals, undertake three major steps to enable its functions - water supply and distribution to keep pace with anticipated growth:

- Add, by June of 1993, filtration capacity to enable the district to meet revised federal and state water quality standards. The district can currently provide filtration treatment for six million gallons per day, and is proposing to expand that capacity to twenty-five million gallons per day.

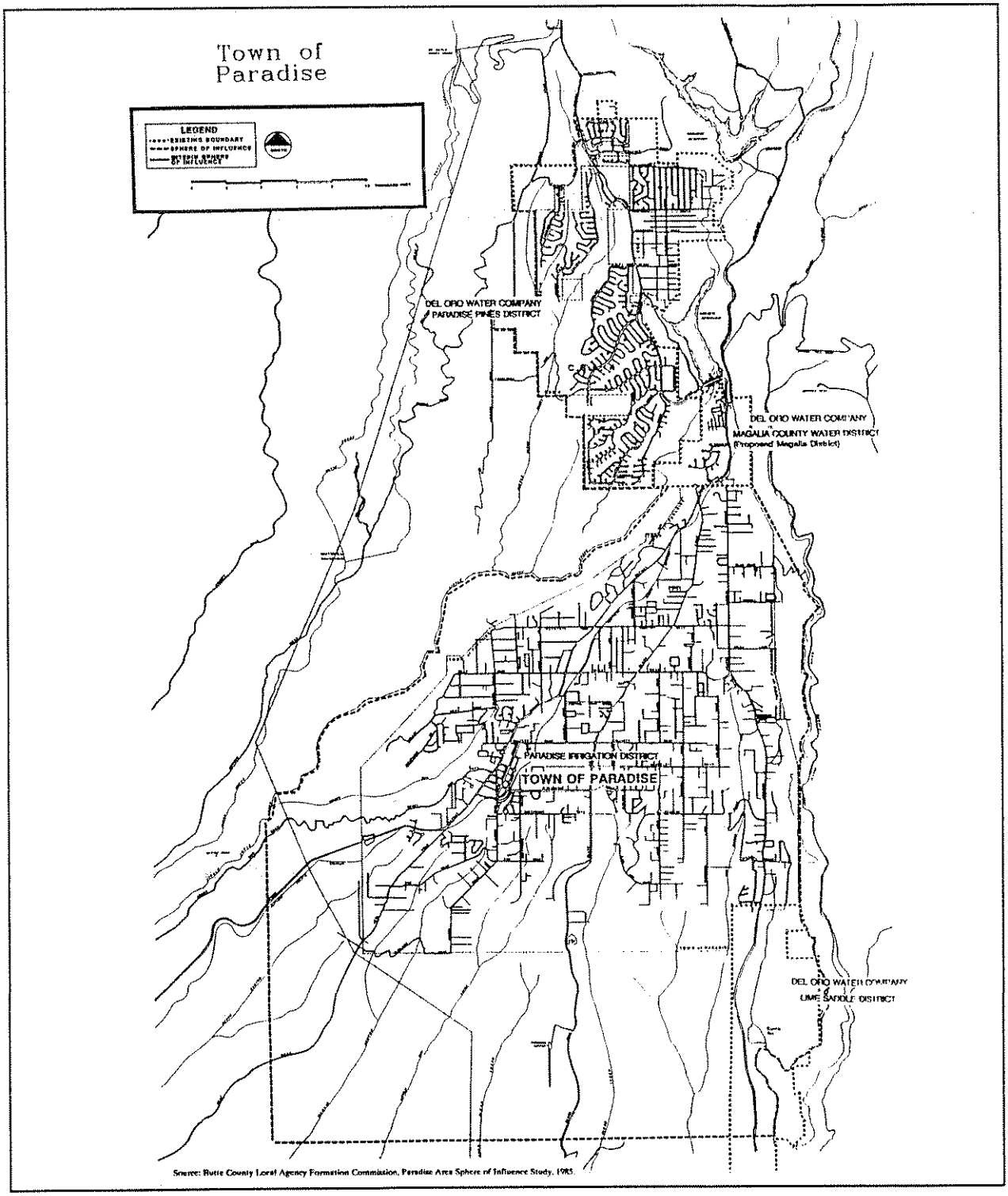
- Supplement its existing surface water supply, deemed by the district to be sufficient to serve community growth to 1996, by adding reservoir capacity, developing a supplementary groundwater source, purchasing surface water, or any combination of these options.

- Replace a significant percentage of the older portion of its 180 mile distribution system, to both improve fire protection to existing developed areas and allow new development in accord with modern fire protection requirements.

Del Oro Water Company

The Del Oro Water Company's Paradise Pines and Magalia service areas have relevance to the Town of Paradise water planning program only if the areas were to be annexed to the town or if their water supply sources conflicted with proposed additional water supplies essential to maintain town growth.

The Lime Saddle service area's water system planning is of greater relevance. It is evident that continued urban growth in the area may significantly impact community resources from a planning standpoint, and there is potential for further annexation to the town of new subdivisions in the area. Del Oro Water Company has recently undertaken the legal and physical steps essential to obtain a supplemental water supply from Lake Oroville to serve further planned urban development in the Lime Saddle area.



WATER SERVICES BOUNDARIES **FIGURE 14-3**

14.9 WASTEWATER

The Town of Paradise is the largest unsewered incorporated community in California. Wastewater treatment facilities within the town consist of individual privately owned septic tanks and soil absorption disposal systems known as leach fields, together with several engineered subsurface disposal systems serving commercial and institutional facilities. In anticipation of an eventual need for centralized wastewater management facilities, portions of a future sanitary sewer system have been constructed along the Skyway. However, there are no existing connections to the system. Businesses and residences in the vicinity of the future sewer system continue to rely on septic tank/leach field systems for wastewater treatment and disposal.

The typical residential septic system installation in Paradise consists of a two-chambered septic tank, measuring approximately 1,000 gallons in volume, connected to about 150 feet of leach field piping. Within the septic tank, heavy solids settle and decompose, leading to the formation of a sludge blanket which must be periodically removed. Grease and other floatables are trapped in a scum layer which forms behind the baffles. In a properly designed, well maintained, septic tank forty to seventy-five percent of the total soluble solids (TSS) and twenty-five to sixty percent of the biological oxygen demand (BOD) are removed. However, septic tank effluent still contains large quantities of pathogenic microorganisms and nutrients. Effluent from the septic tank enters the leach field where physical, chemical and biological processes within the soil provide further treatment and disposal of the wastewater.

Studies

The Town of Paradise authorized several studies, commencing in 1981, to examine the integrity of existing individual wastewater collection and disposal systems (septic tank and leach field design), the extent and degree of water quality degradation and the various alternatives for development of an integrated community wastewater collection, treatment and disposal system. These studies are listed below:

- *Town of Paradise Wastewater Management Study, Phase I Report*, J. M. Montgomery Consulting Engineers, May 1983.
- *Town of Paradise Wastewater Management Study Supplementary Phase I Report*, George Tchobanoglous, March 1984.
- *Town of Paradise Wastewater Management Plan, Phase II Report*, R. A. Ryder and Associates, September 1985.
- *Town of Paradise Wastewater Collection, Treatment, and Disposal Preliminary Design Report*, Volumes 1, and 2, Nolte and Associates, July 1992.

The Town of Paradise contracted with Kennedy/Jenks/Chilton Consulting Engineers to prepare a feasibility study to examine the formation of a central area wastewater assessment district for wastewater collection, treatment and disposal. This study recommended the formation of an assessment district to fund the design and construction of wastewater collection, treatment and disposal facilities.

Current Status

A wastewater design assessment district was formed to finance steps preliminary to construction of a wastewater collection, treatment and disposal facility, including but not limited to environmental impact reports, feasibility studies, engineering plans, cost estimates, legal expenses, the acquisition of easements and rights-of-way. The district withstood a legal challenge and hired a project manager and a consulting engineering firm.

Previous engineering studies have recommended a bifurcated system, with the commercial core of the community being served by a formal centralized collection, treatment and disposal facility, while the balance (the predominantly residential portion of the community) is to remain on septic systems with an onsite wastewater management district to monitor and manage the individual systems.

The plan envisioned a formal sewerage system serving the high wastewater flow areas of the town, including the commercial and multifamily areas, together with the industrial area and other areas with poor soil characteristics. The success of the program is believed to be founded upon the ability to operate an onsite wastewater management district that will care for existing systems, with minimal alterations, for the foreseeable future. The onsite district was formed townwide in May 1992 and has become a town function. The stated purpose of the onsite wastewater maintenance district (zone) is to protect the public health and safety, protect surface and subsurface water quality, conserve water and to minimize the rate and tax expense of the community. The district is intended to accomplish the following tasks:

- Oversee the periodic inspection of all onsite wastewater disposal systems within the zone.
- Provide continuing educational programs for the users of all onsite wastewater disposal systems relating to the proper use, maintenance and repair of said systems.
- Provide reviews and approvals of all repairs and alterations to the existing systems in accordance with the town adopted design guideline manual.
- Provide reviews and approvals for all new onsite wastewater disposal systems that may be installed within the zone in accordance with the town adopted design guideline manual.
- Maintain a water quality monitoring program that will detect any changes in the water quality of the community.