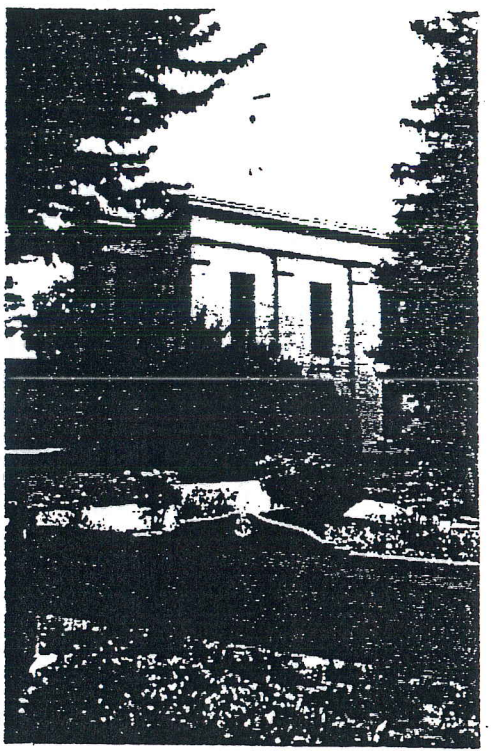


Community Services Element

COMMUNITY SERVICES ELEMENT

"Certainty is the greatest stimulus that can possibly be given to industry. This is more especially the case in matters concerned with agriculture."
Colusa Sun Herald
December 10, 1864

ORGANIZATION OF THE COMMUNITY SERVICES ELEMENT

Although a "Community Services Element" is not explicitly required by state law, the subjects addressed here are critical to the county's future growth and development. Every public service provided in the county, whether water, sewer, drainage, solid waste, schools, or libraries, has limitations. These limitations must be documented so that development decisions can be made in a way that is both fiscally responsible and environmentally sound. This Element describes how public services may enhance or constrain the county's development. Its recommended policies go hand-in-hand with the policies of the Land Use Element; their intent is to channel development into areas where community services can either accommodate growth or be expanded most efficiently.

This Element also provides the first comprehensive inventory of the public services that are provided within Colusa County. A profile of all water systems, wastewater treatment systems, drainage and flood control measures, solid waste disposal practices, law enforcement services, fire protection services, emergency medical services, schools, libraries, and health care services is presented. Following a description of the existing services, the Element describes where expansion will be needed between now and the year 2010. Policies are presented for each service area.

SERVICE PROFILES

WATER

Sources

Water supplied to Colusa County comes from two sources, groundwater and surface water. All domestic systems in the county are supplied with groundwater, while most irrigation systems are supplied with surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River. The Sacramento River groundwater basin underlies the eastern part of the valley floor. Community systems in Arbuckle, Colusa, Grimes, Maxwell, Princeton, Stonyford, and Williams tap into the basin with wells generally 100 to 500 feet deep.

From the toe of the foothills west, the availability of groundwater becomes much more questionable. Boundaries of the basin are not well defined and drilling a domestic well may be a "hit or miss" proposition. When groundwater is found in the foothills, the subsurface reservoirs are small and may dry up during the summer

months. Streams in this area are intermittent and unreliable as domestic water sources. Due to the scarcity of water in the upland areas, the land use plan recommends very limited future development there.

In contrast to groundwater, surface waters are subject to a complex state legal system establishing the rights of individuals and other entities to their flows. In fact, rights to the major surface water source in Colusa County--East Park Reservoir--are allocated to Orland Water Users for irrigation of farmland in Glenn County. Surface water in the Glenn-Colusa and Tehama-Colusa Canals are diverted from the Sacramento River further north in the valley. Water rights have also been allocated to a number of small state and county water districts operating within Colusa County.

Domestic Distribution Systems

In addition to the six community water systems mentioned above, there are 54 water systems registered with the County Environmental Health Department. Most of these systems belong to roadside commercial establishments, hunting clubs or lodges, trailer courts, agricultural industries, labor camps, or isolated residential areas. Two of the larger residential systems serve Stonyford and Century Ranch. These systems have limited expansion potential and are a major limitation to growth in these areas. A description of the community water systems is provided below. The location of domestic systems is shown in Figure COMM-1.

Arbuckle. The Arbuckle Public Utility District provides domestic water to approximately 740 customers. Water is pumped from three wells and pressure tanks of 7,000, 5,000, and 2,000 gallon capacity. Total pumping capacity is 2 million gallons per day (gpd), with consumption averaging 610,000 gpd. During July, the peak use month, consumption may be as high as 1.2 million gpd. Water demand is low enough that only one well at a time is used most of the year; water is drawn from alternating wells throughout the year. Although the wells are equipped for chlorination, the water is clean enough to deliver without treatment. Water quality is checked weekly as specified by state regulations.

The District was formed in 1939 when several smaller districts serving Arbuckle were consolidated. Most of the original cast iron pipes were replaced with asbestos-cement (AC) pipes during the 1950s. Today, the distribution system consists of a series of 6", 8", and 10" pipes; there are no major problems with the system and no extensions are planned. New customers pay connection fees equivalent to the cost of extending the water line to their site.

Water supply is not an immediate constraint to Arbuckle's development. If the town grows as expected, additional wells will be required by the year 2010.

Colusa. The City of Colusa provides domestic water from four automatic wells and from a diesel well which is used during emergencies only. Water is chlorinated for reduction of taste and odor. Water is stored in two elevated storage tanks with a total capacity of 250,000 gallons. The city's wells have a total capacity of 6.60 million gpd, but the pumps at the city's wells are not capable of drawing up that volume of water. Pumping capacity at the wells varies from 500 gallons per minute (gpm) to 1200 gpm. Average daily usage in Colusa is 1.46 million gpd, with about 2.77 million gpd consumed during July and 720,000 gpd consumed during February. During the summer of 1987, all four automatic wells ran continouusly, raising concerns about the system's ability to handle new connections.

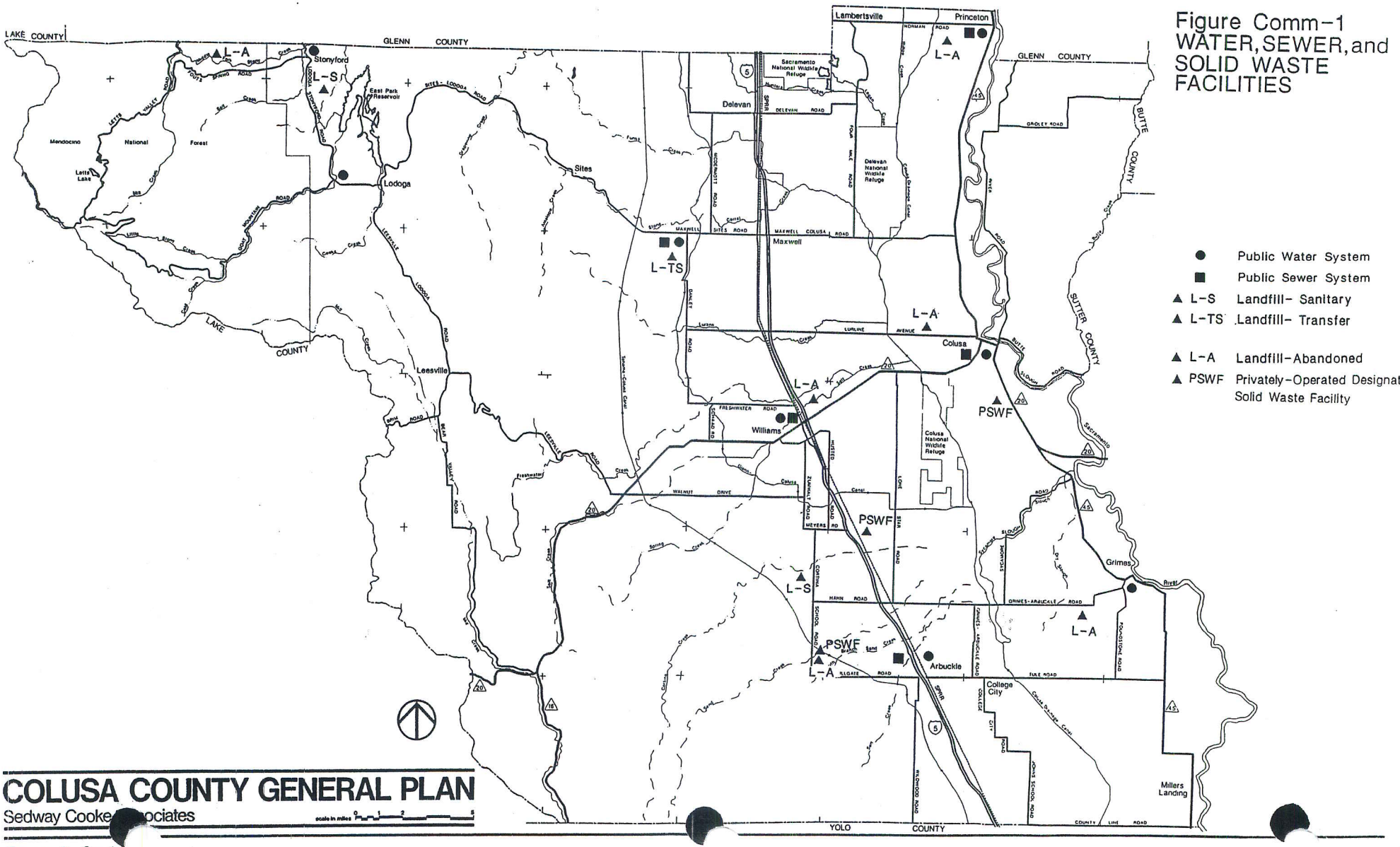


Figure Comm-1
WATER, SEWER, and SOLID WASTE FACILITIES

COLUSA COUNTY GENERAL PLAN

Sedway Cooke Associates

scale in miles 0 1 2 5

Community Service

Water is distributed through a grid system that serves the incorporated area and some of the close-in rural neighborhoods adjoining the city. For the most part, the distribution system is adequate, but line sizes and water pressure need to be upgraded in the Goad's Addition. Private water systems serve some of the larger water users outside the city limits, including a system in the Walnut Ranch subdivision with about 75 connections, and a system in Colusa Industrial Properties. Some of the unincorporated areas around Colusa are served by individual wells, despite densities that may exceed those within the city limits. Well monitoring in these areas suggests that they need to be incorporated into the city's system.

Of 30 private wells in the Lurline Area tested in 1987, 21 did not meet coliform bacteria standards. Even after chlorination, 13 wells still had unacceptable levels of bacteria. The problem has been blamed on old or improperly designed wells, most in close proximity to septic system leach fields. A number of solutions have been explored, including redesigning existing wells, constructing a community water system, and linking the area to the city of Colusa water system. The latter option would be most effective, but will require the construction of a new city well to serve this area. As an interim measure, the county has proposed standards which would prohibit new wells within 100 feet of a septic system, and require a public water system when 50 percent of all parcels are developed. The Community Plan Element recommends that city water and sewer be extended into the east part of this area and that a one-acre minimum lot requirement be placed on the west part of this area.

At the present time, the city needs to add a fifth well to serve development in the Wescott Road area. Ideally, a sixth well should be added to serve the Lurline Road area. As development occurs over the next two decades, older segments of the existing distribution system will need to be replaced and upgraded. Ultimately, private systems such as Walnut Ranch should be tied into the city's system, and the grid distribution network should be completed. To help cover the cost of improvements, the city enacted water impact fees for new development in 1987.

Grimes. The Grimes Utility District provides water service to about 100 customers. The town was served by individual wells until the late 1960s. The new water system alleviated a water quality problem that had resulted from septic systems sited too close to individual wells. The system presently has two wells with a combined pumping capacity of 1700 gpm and a 5,000 gallon pressurized water storage tank. Water is distributed through a grid of 4-, 6-, and 8-inch lines. At this time, there appears to be adequate capacity to support the amount of growth shown in the year 2010 Community Plan for Grimes.

Maxwell. The Maxwell Public Utility District provides water service to about 325 commercial and residential customers. The District operates a 100,000 gallon water storage tank and three wells with pumping capacities of 500, 800, and 1100 gallons per minute. Water is supplied without treatment.

The District received a combination grant/loan package in 1982 to reconstruct the water distribution system and replace deteriorating steel pipes with PVC pipes. Only about 35 percent of the system's capacity is actually used, and water may actually become stagnant in some of the lines due to low demand. The District could presently handle 175 new residential connections with no difficulty. Based on growth projections for Maxwell, capacity will be reached around the year 2000. At that time, addition of a new well or expansion of pumping capacity may be required. Extension of water lines to serve new development areas will also be required.

Princeton. The Princeton Utility District provides water service to about 125 residential and commercial customers. The District operates a primary well with a pumping capacity of 410 gpm and a secondary well with a capacity of 110 gpm. Each well has an 1,800 gallon storage tank. The District supplies about 33,100 gpd, with no treatment required. The distribution system was reconstructed in 1984 and consists of asbestos-cement pipe. Neither the water supply or distribution systems pose a constraint to development.

Stonyford. The Stonyford Water District supplies water from two wells which pump from a large gravel strata. The system includes a 1,000 gallon storage tanks and has no back-up storage tanks. Nearby, the Century Ranch Water system draws water from infiltration galleries on Little Stony Creek. Water in both systems must be chlorinated before distribution.

Williams. The city of Williams operates two main wells and one stand-by well; yields range from 500 gpm to 1,400 gpm each. The groundwater basin has been reliable in the past, but the possibility of an overdraft should not be disregarded. The quality of the groundwater is generally good, although groundwater close to Salt Creek may be affected by drainage from saline springs in the upper part of the watershed.

Water is stored in a 100,000 gallon elevated storage tank and is distributed through cast iron or asbestos-cement mains. Some of the cast iron pipes are 60 years old and have deteriorated from the alkaline soil conditions. Water use in 1984 was about 200 gallons per person per day. Although the system is capable if producing this quantity of water, lines on the south side of town are not large enough for its distrubution. A program to replace deteriorating or undersized pipes is needed before the growth shown in the Williams Community Plan can take place. In 1986, the county applied for a $475,000 grant which would have extended water and sewer lines south along I-5, but the application was turned down.

To support the level of development ultimately envisioned in Williams, new wells, pumps, and storage tanks will be required to the south of town. City water mains should eventually be extended down Davis, George, Engraham, Zumwalt, and Crawford Roads as these areas are developed. Although an independent water system is proposed for the Williams Industrial Properties (WIP) project, this system should ultimately be interconnected into the municipal system. A consolidated system would lower the risk of the WIP wells depleting the city's groundwater resources.

Irrigation Systems

The idea of using Sacramento River water for irrigation dates back to 1860, when pioneer Will Green proposed that a canal be built from Hamilton City south into Colusa County. It was not until 1889 that groundbreaking on the canal began, following a long legal battle with opposing landowners. Legal obstacles continued to plague the canal as it moved south, ultimately halting construction near Maxwell in 1891. Because the diversion facilities had yet to be built and gaps along the route were incomplete, even landowners ready to receive water could not do so.

The Central Canal and Irrigation Company continued the project in 1904-5, and then abandoned it due to a lack of interest on the part of landowners. The canal was subsequently acquired by the Sacramento Valley Land Company, who used it as part

of their nationwide campaign to sell 20 and 40 acre farms in Glenn and Colusa Counties. By 1913, this scheme too had failed and the canal was purchased by the bondholders. By this time, water was being delivered at $7 an acre for rice and $2 an acre for all other crops. With the soaring demand for rice after World War I, the canal was expanded and operation passed into the hands of the Glenn-Colusa Irrigation District.

State water rights on the Sacramento River were complicated when the federal government built Shasta Dam in 1937. It was not until 1963 that a contract was approved clarifying the water rights of the Glenn-Colusa District and the Bureau of Reclamation. The contract allows the Glenn-Colusa District 720,000 acre feet of base supply and 75,000 feet of federal project water.

Further west, the Tehama-Colusa (T-C) Canal provides irrigation water to lands west of Maxwell, Williams, and Arbuckle. The canal was authorized as a federal project in 1950 and construction began near Red Bluff in 1962. By 1980, the canal had reached Dunnigan, just south of the Colusa County line. An extension to the Winters area of Yolo County is planned, providing water to farmers near Woodland and Davis. The canal has enabled a large area formerly used for dry land farming to be converted to orchards and row crops, dramatically increasing the yield per acre on the west side of the valley. The current allocation to Colusa County--175,000 acre feet--will need to be increased in the future as dry grain crops are replaced by crops requiring irrigation. The county now uses about 100,000 acre feet of T-C water a year.

Another source of irrigation water is the Colusa Drainage Trough (the 2047 Canal). Since 1953, individual irrigation districts have agreed to maintain the portion of the canal within their boundaries. In return, they are permitted to divert drain water for farming. In all, the county uses a total of 968,000 acre-feet of water a year, of which 815,000 acre-feet is provided by irrigation canals. The balance is extracted from the ground, where shallow wells tap a groundwater basin that is saturated most of the year.

Table COMM-1 lists all agricultural water suppliers in Colusa County. The list includes four irrigation districts covering 221,000 acres, seven California Water Districts covering 24,000 acres, a County Water District covering 43,000 acres, and two private irrigation companies covering about 2,000 acres. Each district has the authority to collect fees for water use and levy an ad valorem tax if the fees are not sufficient to cover operation and maintenance costs. A 1982 study by Clendenen Associates found that coordination between the irrigation districts was not sufficient and recommended that management be more centralized. A more centralized system would set water rates more equitably and ensure that costs and benefits were distributed more evenly. At the present time, each district is concerned only with the fraction of the county it serves rather than with the county as a whole.

Policies

WA-1 To protect local water rights and interests, Colusa County should present a unified and coordinated approach to water supply issues. The county should support State water policies which ensure that the county has first right to water originating locally.

Table COMM-1: Agricultural Water Districts of Colusa County

Irrigation Districts	County	Acreage	Office Location
Glenn-Colusa	Glenn/Colusa	175,000	Willows
Princeton-Codora-Glenn	Glenn/Colusa	14,000	Princeton
Provident	Glenn/Colusa	23,000	Willows
Maxwell	Colusa	9,000	Maxwell
California Water Districts			
Holthouse	Colusa	1,920	Maxwell
4-M	Colusa	1,790	Willows
Westside	Colusa	12,090	Williams
Glenn Valley	Glenn/Colusa	1,965	Colusa
LaGrande	Colusa	1,490	Williams
Cortina	Colusa	1,290	Arbuckle
Davis	Colusa	953	Arbuckle
County Districts			
Colusa County	Colusa	42,590	Arbuckle
Reclamation Districts			
2047	Glenn/Colusa	230,000	Willows
479	E.Colusa	6,500	Colusa
108	Colusa/Yolo	65,000	Grimes
1004	E.Colusa*	23,000	Colusa
Levee Districts			
LD-3	Glenn/Colusa	13,000	Willows
Sacramento River West Side	Colusa/Yolo	107,000	Grimes
Drainage Districts			
Knights Landing Ridge	Colusa/Yolo	94,000	Grimes
Sacramento River-San Joaquin	Butte to Fresno	1,515,000	Sacramemto
Mutual Water Companies			
Willow Creek	Glenn/Colusa	7,000	Willows
Myers Marsh	Colusa	165	Williams
Other			
Colusa Irrigation Co.	Colusa	450	Colusa
Roberts Ditch Co.	Colusa	1,500	Colusa
National Wildlife Refuge			
Sacramento (Colusa Co.part)	Colusa	2,200	---
Delevan	Colusa	6,000	
Colusa	Colusa	4,400	

Source: Clendenen & Associates. Feasibility of Public Agency to Coordinate Water Management in Colusa County. January, 1982.

WA-2 As its financial resources permit, the county should support studies that improve the understanding of the limitations of its groundwater basin. Opportunities to obtain additional state and federal assistance in this area should be encouraged.

WA-3 All wells drilled to serve new development shall meet California Department of Public Health water quality standards. If necessary, water shall be treated to meet these standards.

WA-4 New industries which consume significant amounts of water should be encouraged to recycle the water and ensure its percolation back into the groundwater strata. Water recycling must be undertaken in a manner that protects the groundwater from contamination.

WA-5 An organized program of well monitoring which evaluates the quantity and quality of groundwater at municipal wells in the county should be initiated.

WA-6 Where no surface water source is available, the availability of groundwater sufficient to meet project needs should be one of the primary considerations used to determine the suitability of a site for development.

WA-7 The potential impact of development on the quality and quantity of water in existing wells should be a primary consideration for proposed projects. Future development shall be located in a way that ensures the long-term provision of water to existing and future county residents in an economically feasible, financially sound manner.

WA-8 Creation of new domestic water districts should be discouraged. Merging of independent water districts into municipal or public utility districts should be encouraged as each community grows. Where public water is available, new industries within Community Plan Areas should be required to tap into this supply rather than drilling independent private wells.

WA-9 New dwellings located on pre-existing legal lots at densities in excess of those prescribed for "Rural Residential" areas (one house per acre) should be encouraged to enter into a well-monitoring program designed to ensure their long-term access to an adequate water supply.

WA-10 The County shall support efforts which enable waters of the Tehama-Colusa Canal to be used for municipal and industrial use.

WA-11 Efforts to centralize the provision of irrigation water and consolidate service districts should be supported where feasible.

WASTEWATER DISPOSAL

Types of Disposal Systems

Wastewater is treated and returned to the natural environment using one of several methods. In Colusa County, the primary methods are on-site disposal and centralized disposal. Five communities in the county--encompassing about 65 percent of the population--are served by centralized systems. The areas served by on-site systems

are generally rural or agricultural. Although most on-site systems serve an individual dwelling or commercial establishment, some serve groups of homes or businesses.

The **on-site systems** consist of a septic tank that receives wastewater, allows heavier solids to settle, and releases the remainder to a leach field. The leach field consists of perforated parallel lines through which water percolates into the soil. The solids remaining in the tank must be periodically disposed. Septic tanks work well at low densities where adequate room can be provided for the leach field and sufficient distance can be maintained between the leach field and potable water wells. They are relatively inexpensive to maintain and operate and have good water recharge characteristics. Their disadvantage is that they require certain soil, topography, and water table conditions to work. If these conditions are not present, the leach field can become saturated and the groundwater may become contaminated.

Septic systems may also be problemmatic where they serve commercial and industrial establishments. Wastewater may contain chemicals and greases that cannot be adequately filtered before reaching the groundwater. In some cases, chlorine injection or evaporation ponds must be provided on industrial properties to ensure safe disposal of sewage.

On-site systems were once prevalent in the communities of Arbuckle, Maxwell and Princeton. With the increase in water consumption and the use of appliances such as washing machines and dishwashers, most leach fields were simply not large enough to properly dispose of wastewater. Lots were usually too small to enlarge the leach lines, and centralized sewage treatment became a necessity. This has not been the case in Grimes, Century Ranch, College City, and Stonyford, where individual septic systems continue to serve the communities. Since very little development is planned in these communities, they will probably remain on septic systems through the next two decades. Where development does occur, the use of group septic systems should be encouraged to reduce the risk of groundwater contamination. Group systems serve several homes and allow more flexibility in locating the leach field.

Another possible means of sewage treatment where centralized service does not exist would be to build small **package treatment plants** for new development. The package plant uses aeration to speed up the bacterial breakdown of organic material and produces better quality effluent than a septic system. Inside the plant are a screen to remove large solids, a settling chamber, and a disinfection unit. A diffuser or mechanical agitator inside the settling chamber produce oxygen so that aerobic bacteria can grow. Bacteria-laden wastewater moves to the disinfection chamber while solids settle to the bottom. Although these systems are more effective than septic tanks, they are much more expensive to operate and maintain. They would be most effective for industrial uses not served by public utility systems. Their use in new residential development in Colusa County should not be encouraged.

Community treatment facilities serve Arbuckle, Colusa, Maxwell, Princeton, and Williams. Community systems consist of a network of collection lines, a treatment facility, and a disposal system. Treated wastewater is typically disposed through a combination of evaporation ponds and discharge to a stream or drainage channel. A description of the five community systems in Colusa County is provided below. The location of these systems is shown in Figure COMM-1.

Arbuckle. The Arbuckle Public Utility District has provided sewer service to Arbuckle residents since 1953. A system of clay pipes carries wastewater to a

treatment plant north of town. The plant consists of a clarifier, a digester, and 7 evaporation/percolation ponds. The ponds provide sufficient surface area for evaporation and filtration so no effluent is discharged. About 220,000 gallons are treated each day, with about 300,000 gallons treated on a peak day. The system's capacity is 400,000 gpd.

The collection system is in good condition, although stormwater inflitration is a problem during heavy rains. About 200 new residential connections could be supported before additions to the treatment plant would be needed. Additional evaporation ponds will probably be required by the year 2000; more sophisticated equipment may be needed if wastewater from new industries is routed to the plant.

Colusa. The city of Colusa operates a sewage treatment plant and evaporation pond system. The plant and ponds are located in an agricultural area about 1-1/2 miles southwest of downtown. The plant, which was built in 1949, consists of a raw wastewater pumping station, a circular clarifier, an anaerobic sludge digestion unit, and sludge drying beds. Treated wastewater is conveyed via an 18" trunk line to a network of oxidation ponds and evaporation ponds, then to a chlorine contact chamber, and then discharged to Powell Slough 2,000 feet to the east. The ponds cover about 82 acres. Two additional 10-acre ponds are under construction; when complete, the ponds will allow the city to use a more effective system for algae removal.

Effluent from the treatment plant has suspended solids concentrations that exceed state water quality standards. Consequently, the city is only permitted to discharge 500,000 gpd. The amount treated at the plant sometimes exceeds this volume so treated wastewater is sometimes held in the ponds before it is discharged. In 1986, average daily flow at the plant was 480,000 gpd. During the peak month (July), flow through the treatment plant averaged 697,000 gpd, while flow during the low month (February) was 336,000 gpd. The plant's capacity is between 1.5 and 2.0 million gpd. Once the suspended solids problem is corrected, the plant should be capable of handling Colusa's growth through the next two decades. Additions may be required if Colusa Industrial Properties is linked to the municipal system and if new industries locate within the service area.

Most of the city's collection system was installed in 1910. About 90 percent of the system is vitrified clay pipe, while the remaining lines are composed of asbestos-cement or concrete. Although many of the lines are old and prone to infiltration, the system is generally sufficient to handle existing flows. The 1984 Sphere of Influence Study for the city identified the following problems: (1) mortar joints in the northern part of the system were in need of replacement; (2) the 12" trunk line between Ware Avenue and the lift station was in need of replacement; (3) pumps at the lift station had insufficient capacity and needed to be replaced; and (4) the trunk line serving the Wescott Road and East Side areas needed to be increased in size. The last two items continue to pose a constraint to development on the city's south and east sides. A larger trunk line and new lift station will be required before additional development can occur in that area. To cover the cost of maintaining and extending the system, the city enacted "inclusion" fees for new development in 1987.

Maxwell. Maxwell's sewage treatment plant consists of three oxidation ponds and a chlorinator and is located about one mile south of town. The plant, which was rebuilt in 1973, handles between 35,000 and 50,000 gallons per day. Treated effluent is discharged to a drainage ditch which leads to Lurline Creek. The collection system consists primarily of 6" and 8" concrete pipes and 12" vitrified clay pipe. Concrete pipes in the southeast part of town were replaced with PVC pipes in 1982, correcting

an infiltration problem and improving the efficiency of the system. The replacement program will continue over the years ahead and eventually all concrete pipes should be replaced with the less porous PVC pipes.

The Maxwell treatment plant can handle more than double its present number of residential customers and should be sufficient to meet the town's needs through the year 2010. However, the plant would probably need to be upgraded if large industrial users moved to town.

Princeton. Princeton's sewage treatment system provides service to about 85 customers. The system, which was constructed in 1969, consists of two aeration ponds and a lift station. The ponds are relatively odor-free, in part because they are operating at about 20 percent of their design capacity. Expansion of the collection and treatment systems should not be required during the next two decades.

Williams. The City of Williams operates a municipal sewage treatment plant on a 30-acre site north of town. The plant consists of one aerated lagoon and three oxidation ponds. Sewage is chlorinated and effluent is discharged to a ditch leading to Salt Creek. In past years, the city has applied for federal assistance to upgrade the plant since it does not meet minimum discharge requirements. No funds have been approved at this time.

The treatment plant was originally designed to handle 500,000 mgd, but has been upgraded to handle about 600,000 mgd. The current flow is half this amount, or 300,000 mgd. About 300 new residential connections could be supported by the system. The plant will need to be upgraded to increase the volume of wastewater it can handle and to improve the quality of treated effluent. Segments of the wastewater collection system will also need to be upgraded. The vitrified clay pipes are prone to excessive infiltration of stormwater during the rainy season. As development occurs south of the city, sewer service should be extended south; use of septic tanks for new homes along Davis, George, Engraham, and Zumwalt Roads should be discouraged as this area is planned for urban densities.

One long-term possibility for Williams is to relocate municipal sewage treatment to a reserve site in the Williams Industrial Properties project. A treatment plant serving that project is planned on a 54-acre site in the northeast portion of the development. A lift station could be constructed at the existing city plant and wastewater could be routed south and east to the new plant. The existing plant is has a history of odor problems, as it is upwind of the city and relatively close to residential areas. The Industrial Properties site is east of the freeway and woiuld be much more remote from the center of town.

Policies

WWT-1 Future development should be located in a way that ensures the economically feasible and environmentally sound provision of wastewater treatment.

WWT-2 Development at urban densities should be discouraged in communities not served by a central sewer system. Where rural development occurs at densities of more than one unit per acre, the use of groups septic systems should be promoted.

WWT-3 Subject to review by the Department of Environmental Health, Colusa County should permit "alternative" on-site treatment systems in rural areas, including mound systems.

DRAINAGE AND FLOOD CONTROL

Sacramento River and Colusa Basin Flood Control

Efforts to control floodwaters along the Sacramento River date back to the turn of the century. Winter flooding was a recurring problem on the valley floor due to the county's flat terrain and flood volumes that are exceeded by only three other rivers in the United States. After attempts to build levees along the river failed during the early 1900s, the State adopted a Sacramento River Flood Control Project and created the State Reclamation Board to administer the project. The Sacramento and San Joaquin Drainage District, encompassing 1.5 million acres of the Central Valley, was created to acquire and assess lands benefitting from the project. The project was initiated in 1917.

Sacramento River floodwaters were diverted through a weir just north of Colusa into the Sutter Bypass. The bypass drains south 40 miles to Knights Landing where waters are diverted to the west side of the river, into the Yolo Bypass and eventually to the Delta. While the State Project effectively contained Sacramento River waters, it did not address winter flooding of the Colusa Trough, a low-lying area parallel to and several miles west of the river. During the 1910s, Reclamation District 108 and other entities built a levee along the Trough to divert floodwaters from the west between Colusa and Knights Landing. Their efforts were supplemented in 1919, when Reclamation District 2047 was created to construct a ditch from Willow Creek in Glenn County to a point about 10 miles south of Colusa.

Due to the increase in irrigated acreage west of the Trough, winter runoff now exceeds the capacity of the ditch and flooding is once again a problem. The ditch was designed to drain 100,000 acres of rice and now handles double that amount. Maintenance of the drain is uncoordinated and spotty, and is limited by a lack of funds. Makeshift levees line the drain from one end of the county to the other. There are also trees and structures which may prevent the drain from operating efficiently. The private and public costs of flooding in the Basin are substantial. In 1983 and 1986, floods caused displacement and complete destruction of buildings, water damage, siltation, loss of utilities, road damage, transportation slowdowns, and a loss of goods and materials.

Drainage problems in the Basin have been exacerbated with construction of the Tehama-Colusa Canal. Western valley lands were not irrigated before the canal's construction and therefore were not a significant contributor to runoff. Since the federal environmental impact statement for the Canal did not address the impacts of additional water delivery on drainage and flood control needs in the Basin, no mitigation measures were established to protect the Trough from the additional stormwater.

Opinions on a permanent solution to flooding in the Colusa Basin are mixed. Most agree that construction of additional facilities would overtax local resources and must await State or federal funding. Some have suggested that constructing flood control dams on streams draining into the basin would be effective. However, the

cost of the dams would be prohibitive unless their hydrolectric power potential could be tapped. Construction of flood-control lakes might also induce residential development, undermining the land use plan and possibly interfering with agriculture or ranching.

The California Legislature recently approved formation of a Colusa Basin Drainage District, encompassing parts of Glenn, Colusa, and Yolo Counties. The District has been charged with developing a comprehensive plan for flood control in the Basin. When a preferred solution is chosen, the District will seek funding for its implementation. The District is to be operated by a 9-person board of directors, including three appointees of the Boards of Supervisors, three appointees of area drainage, irrigation, and reclamation districts, and a representative to be elected from each county. The federal government has also authorized funds for repair of the Trough levees in Colusa and Yolo counties.

Tributary Flood Problems

Erosion and drainage problems are not limited to the Colusa Drain and Sacramento River areas. Drainage courses across the valley have been altered as farmers have straightened channels, leveled fields, and realigned streams. In some cases, this has resulted in faster runoff rates and increased erosion and sedimentation. Siltation has filled many roadside culverts with sand and gravel, causing floodwaters to back up behind bridges and erode adjoining lands. The natural drainage pattern has also been altered by road construction and by construction of canals that run perpendicular to natural drainageways. There is an evident need for a countywide drainage plan that addresses these issues comprehensively.

Recognizing this need, the Colusa County Flood Control and Water Conservation District was created in 1983. The Board of Supervisors are the governing body of the District, which has the stated objective of "achieving total water management for Colusa County". Residents of the county may now form zones of benefit and may levy taxes to cover the cost of drainage improvements within these zones. Such a zone was created in Colusa in 1987 after the city became concerned about the future of an abandoned railroad embankment that blocked floodwaters during the 1983 floods. The incident pointed to the need for a thorough study of flood control measures needed to protect the Colusa area.

Community Storm Drainage Systems

The need for storm drainage improvements has also been identified in the city of Colusa; storm drains on the east side are already at capacity. During heavy rains, the combination of clogged surface drains and small diameter pipes cause the system to back up and flood local streets. Colusa is the only town in the county with an extensive storm drainage system; roadside drainage ditches and culverts are used in the smaller communities.

Storm drainage is also an issue in Williams, where a large portion of the city lies within the 100-year flood plain of Salt Creek. In the past, drainage problems have been addressed on a parcel by parcel basis, often transferring the problem from one parcel to the next. An overall flood control solution has yet to be proposed. Further development of the flood-prone area is not recommended until the boundaries of the flood plain are verified and a solution to existing drainage problems is reached.

Storm drainage is a lesser issue in Grimes, Arbuckle, Maxwell, and Princeton. The latter three towns were the subject of storm drainage studies between 1977 and 1979. Each study recommended a series of capital improvements to reduce problems such as overbank flooding of roadside drainage ditches. Some of these improvements are now in place.

The Community Plans have made a conscious effort to channel development away from flood-prone areas. Nonetheless, increased development will reduce the amount of permeable ground surface and increase runoff rates, especially to Salt Creek in Williams. Additional storm drainage and channel improvements may be needed to prevent street flooding within developed areas and overbank flooding in downstream agricultural areas. As with other categories of public service, new development should be required to mitigate the drainage impacts it creates.

Levees

Four local levee and reclamation districts maintain the Sacramento River levees in Colusa County. Areas lying outside the boundaries of these districts--including the west bank of the river between Glenn County and the city of Colusa--fall within designated State Maintenance Areas (SMAs). The State Department of Water Resources (DWR) maintains the levees in these areas through a zone of benefit assessment. Because the DWR has high overhead and labor costs, their maintenance charges are considerably higher than the local districts'.

Between 1982 and 1986, the county did not pay the State for maintenance work and accrued an overdue bill of $115,000. To cover the cost, it became necessary to assess residents of the SMAs for "back taxes" in 1987. The county is presently considering including the SMAs in a local levee district. The advantage would be lower operating costs and lower taxes for residents of the district. The disadvantage would be the local liability in the event a levee is breached. Insurance costs to cover such a catastrophe could be so high that it might be cheaper to keep these levees under state control.

Policies

FL-1 The cost of flood control and drainage improvement projects should be allocated fairly among those responsible for the problem and those benefitting from the solution.

FL-2 Colusa County should support preparation of a countywide drainage and flood control plan which assesses the needs and costs of different options for reducing flooding.

FL-3 Wherever possible, flood control projects should avoid extensive alteration of natural creeks and destruction of riparian vegetation.

FL-4 New development should be required to mitigate its drainage impact through any of a series measures that should be explored in a countywide drainage and flood control plan.

FL-5 The use of special assessments within geographically defined zones of benefit should be used as a means of financing flood control and drainage improvements.

FL-6 Future development in the county should be located in a way that precludes the need for costly flood control structures and drainage improvements. Development in the 100-year flood plain should be discouraged; no critical or high occupancy structures such as schools and hospitals shall be permitted in the flood plain.

FL-7 Comprehensive drainage solutions to community flooding should be supported. Piecemeal solutions which divert floodwaters from one parcel to adjoining parcels shall be avoided. Environmental evaluation of development should always consider cumulative drainage impact.

FL-8 The County should support efforts to acquire state and federal funds for the reconstruction of levees and other flood control structures.

SOLID WASTE

System Profile

As mandated by a 1972 State law, Colusa County prepared a Solid Waste Management Plan in 1975. This plan, which addresses the collection of solid wastes, its disposal in landfills, and recycling, provides the basis for the county's present solid waste disposal program. The plan is now 14 years old and needs to be updated to reflect new fiscal, environmental, and management concerns. Because solid waste management will be addressed in a number of upcoming studies and reports, the issues are discussed only briefly here. Policies for collecting and disposing of waste, and paying for landfill operation will need to be developed in the near future.

There are four types of waste generated in Colusa County: residential wastes, commercial wastes, industrial wastes, and natural resource byproducts. About 50 percent of the wastes brought to the landfills are from residential customers. Commercial wastes make up about 30 percent of the waste disposed and industrial wastes make up just over 10 percent. Pirelli Cable is the only major industry using the landfill and its refuse is similar to refuse generated by commercial businesses. Natural resource refuse includes rice stubble and straw, manures, gas well muds, cannery wastes,and wastes from prune dehydrators. Rice straw and stubble is usually burned or disked into the land and manures are usually used for fertilizer.

Prior to 1975, the county operated seven open dumps near Arbuckle, Colusa, Grimes, Maxwell, Princeton, Williams, and Stonyford. An eighth dump on Fouts Springs Road was operated by the U.S. Forest Service. The dumps were closed after operations were centralized in two sanitary landfills--one south of Stonyford and another on Evans Road--and a 10-acre transfer station south of Maxwell. The transfer station was needed to reduce the distance over which waste from the Princeton and Maxwell areas would need to be hauled. The Evans Road landfill was initially designed with a 20-year capacity, but was expanded so that it could accommodate the county's growth beyond the year 2010. The landfill could reach capacity sooner than 2010 if the county accepts waste from other counties, experiences a great surge of industrial growth, or permits private firms from other regions to use the facility. The location of the landfills and abandoned dumps is shown in Figure COMM-1.

While expansion of the landfill is not essential at this time, the county should consider acquiring adjacent land to meet its long-term needs. A larger landfill site would offer more flexibility when considering policies regarding solid waste disposal. Additional land would also provide a buffer between the site and adjoining agricultural land. Finally, when expansion is required, it would be easier to expand on to an adjoining site rather than a site in another part of the county. One option for expansion would be to realign a drainage ditch within the existing landfill. This would free up about 30 acres that are now unuseable and would avoid the purchase of additional private land.

Solid waste collection is a municipal operation in Colusa and Williams. Two private contractors provide waste collection services elsewhere; one serves the other valley towns and one serves the Stonyford-Lodoga area. As of 1975, the Evans Landfill received about 950 tons of refuse a month, while the Stonyford Landfill received about 50 tons a month.

Privately-Operated Designated Solid Waste Facilities

A privately-operated designated solid waste facility has been proposed on a 160-acre site three miles northwest of Arbuckle. The facility has been designed to receive non-toxic saline wastewater and brines which are drawn up during natural gas drilling. As planned, it will consist of 16 brine evaporation ponds; a stormwater/ emergency management pond, office, laboratory, and storage buildings; and staging, off-loading, and processing areas. The ponds would be lined with synthetic material as well as reworked clay from the site. Toxic materials or hazardous wastes would not be permitted at the site; trucks containing such wastes would be turned away.

Location of the project, which is commonly known as CERRS (Charter Evaporation Resource Recovery Systems), is shown and designated in Figure COMM-1 (PWSF). The land use authorized adjacent to and near this CERRS site is General Agriculture (A-G), which is compatible with the establishment and expansion of the CERRS site (Government Code Section 66796.49 (b) (1) and (2)). The ponds are to be developed over a period of about 2 years and will have a lifetime of about 20 years. Once closed, the site could be restored to agricultural use or revegetated.

At the present time, saline wastewater is either injected into the ground through abandoned gas wells or disposed at the Evans Road Landfill. More stringent requirements for the Evans Landfill now being set by the Regional Water Quality Control Board may restrict or prohibit the disposal of brines at that facility. At the same time, there is a growing concern about the impact of injection wells on the groundwater basin. The CERRS project addressed both of these concerns and appears to offer a viable, environmentally sound alternative. Accordingly, the Planning Commission requested that an Environmental Impact Report be prepared for the Charter project to ensure that environmental impacts could be adequately mitigated. The CERRS EIR was finalized and adopted by the Colusa County Planning Commission.

In addition to the CERRS project, private disposal facilities are proposed just south of Colusa Industrial Properties (for wastewater disposal) and on Meyers Road (for solar saltwater evaporation ponds). These facilities are shown on Figure COMM-1.

State-Mandated Landfill Testing

Colusa County has recently found itself faced with several state mandates for studying the impact of its landfills on the environment. The county is required to develop a Waste Assessment Plan and a Waste Discharge Plan, and is expected to use local resources to pay for these plans. When these studies and tests are complete, the county will find itself faced with the cost of correcting whatever problems are revealed, as well as the cost of an annual testing and monitoring program. These costs, coupled with the expense of maintaining the landfills and transfer station, forced the county to set gate fees during 1987. Annual fees were charged to the cities of Colusa and Williams; these costs have been passed on to customers through hikes in the monthly service charge.

The gate fees and city fees alone will not cover the cost of testing, monitoring, and correcting problems at the landfills. Among the options considered during a series of meetings in 1987 were: (1) further increases in the gate fees and increases in the Colusa and Williams service charges; (2) creation of a countywide service district and levy of a property tax based on type of use; (3) reduction in operating hours, to three days a week at the Evans Landfill and two days a week at Stonyford and Maxwell; (4) closing the Maxwell Transfer Station, unless its gate fees can fully cover its operating costs; (5) selling waste disposal privileges to private enterprise in other counties; (6) franchising the landfills and transferring liabilities to private enterprise; (7) allowing Yuba and Sutter Counties to operate the Evans landfill and in exchange, allowing them to dump at the site; and (8) ignoring the State mandate and continuing "business as usual". Only the last option has received public support.

Although ignoring the State mandate is a popular rallying cry, it is not an effective long-term solution to the problem. The environmental impacts of the landfill must eventually be studied and corrective action must be taken if there are problems. Increases in user fees have opposed most vocally by the city of Colusa, while residents of Maxwell and Princeton have been opposed closure of the Transfer Station. Use of the Evans Landfill to generate "income" for the county has sparked strong opposition from residents in Arbuckle; a proposal to let a private firm from out of the region dump asbestos at the site raised concerns about environmental impacts and groundwater safety. The reaction also suggested that county residents would not favor a solution in which other counties deposit their wastes in Colusa County, no matter how much money might be collected. The debate over landfill financing is unresolved and should be a major focus of the updated Solid Waste Management Plan.

Meanwhile, the county has just completed a hazardous waste management study with State funds provided through the Tanner Bill. The study was prepared in response to a state law which will prevent the county's landfills from receiving hazardous materials beyond 1991. The Tanner Plan sets criteria for hazardous waste disposal. It examines the kinds of wastes generated in the county and recommends ways to dispose of them safely and economically. The plan also examines what kinds of provisions should be made after the 1991 limitation is in place. A hazardous material transfer station will probably be required to contain toxic materials while they await transport to a designated disposal site.

Policies

SW-1 Colusa County shall update its 1975 Solid Waste Management Plan and explore the need for new or changed facilities, options for collection and disposal, the environmental impacts of disposal, and methods of financing waste collection and landfill operation.

SW-2 Colusa County should promote and encourage practices and technologies which reduce the use of hazardous substances and the generation of hazardous wastes, recover and recycle wastes for reuse, and treat those wastes not amenable to reduction or recycling so that the environment and community health are not harmed by their disposal.

SW-3 Commercial suppliers and manufacturers of farm and non-farm chemicals should be encouraged to utilize closed, reusable containers.

LAW ENFORCEMENT

System Profile

The unincorporated areas of Colusa County receive general public safety and law enforcement services from the County Sheriff Department. The Department also serves as the Coroner's Office and the County Emergency Services Center. The County Sheriff Department operates a single dispatch center on Bridge Street in Colusa; all emergency calls in the county are handled through that center. With a staff of just 18 patrol officers and a patrol area of 1140 square miles, the department's resources are at their limit. Six correctional officers manage a jail population that averages 35 inmates, up from 10 inmates just 6 years ago. The Department's resources have also been strained by an increase in civil process cases and by more complicated state-mandated data reporting procedures.

In all, there are 45 staff members, including 27 sworn staff. This is an increase of 4 people since 1981, despite much greater increases in the number of arrests. There are presently about 2 sworn officers per 1,000 county residents. Based on population projections for the county and the same ratio, about 47 sworn staff would be required by the year 2010. With 98 beds and about 35 percent occupancy, the county jail appears to have adequate capacity to handle projected growth.

Municipal police departments serve the cities of Colusa and Williams. Colusa has 9 sworn police officers, one civilian animal control officer, and one full-time and one half-time secretary positions. Williams has 5 sworn police officers and no clerical staff. Both cities use the county jail for all detention cases. Since many municipal police matters cross jurisdictional lines, the city forces work very closely with the Sheriff Department. The County provides 24-hour dispatching services for the cities, and the cities and county participate jointly in search and rescue efforts.

A number of other law enforcement agencies operate within Colusa County. The District Ranger has responsibility for the Mendocino National Forest. The Fish and Game Warden patrols the National Wildlife Refuges. During 1987, the county participated in the State Campaign Against Marijuana Planters (C.A.M.P.), using aerial surveillance to spot and recover marijuana plants in the Stonyford area. Finally, the State Highway Patrol (CHP) operates on state roads in the county and maintains an office and vehicle yard in Williams.

Although the county's crime rate is relatively low, the demand for police services will inevitably rise as the county grows. Increased population and tourism will need need to be matched by new personnel, facilities and equipment. Increased traffic volumes will result in more accidents, more violations, and greater responsibilities for the Sheriff Department. As the county attracts new industry, there may be a variation in the types of crime committed; there may be increases in vandalism and equipment theft. Finally, residents moving to the county from urban areas may have higher expectations for response time; unless the function of the department is changed, it will be very difficult to meet these expectations.

Even at the present time, the Sheriff Department needs 2 additional deputy officers and 2 correctional officers. As the force grows, new squad cars and vehicle maintenance areas will be needed and the Department is likely to require additional office space. In fact, the Department has already enclosed a carport and converted it to office space. Further expansion is likely to come through additions to the main building rather than through addition of substations in outlying communities.

Policies

LAW-1 To minimize increases in crime, new subdivisions and buildings should be designed to foster a sense of community. Rental housing and other high-density developments should be designed so that residents may feel responsible for their properties and for informal surveillance of activities around their home.

LAW-2 To reduce service inefficiency, annexations which leave irregular borders or unincorporated "islands" should be minimized.

FIRE

Overview

Fire protection services in Colusa County are provided by 8 rural districts, 2 city fire departments, the California Department of Forestry, and the U.S. Forest Service. The majority of the districts are staffed by volunteer fire fighters. There are mutual aid agreements between most of the agencies to ensure that adequate manpower and equipment can be provided when a fire occurs. Fire Districts and stations are shown in Figure COMM-2.

The incidence of fire in the county is relatively low, particularly on the valley floor where the hazards are also low. The greatest hazards are in those areas under the jurisdiction of state and federal agencies and occur between June and October. Each summer, the CDF and US Forest Service increase their staff in anticipation of brush and forest fires. The 8 rural fire protection districts are responsible for structural and wildfire protection as well as medical emergencies within their boundaries. Response times can be as quick as one minute in the cities to more than 20 minutes in the rugged mountain areas.

Each district is assigned a rating by the Insurance Service Office (ISO) to determine its insurance costs. The ratings can range from 1 to 10, with higher numbers indicating less protection. Fifty percent of the rating criteria is based on the agency

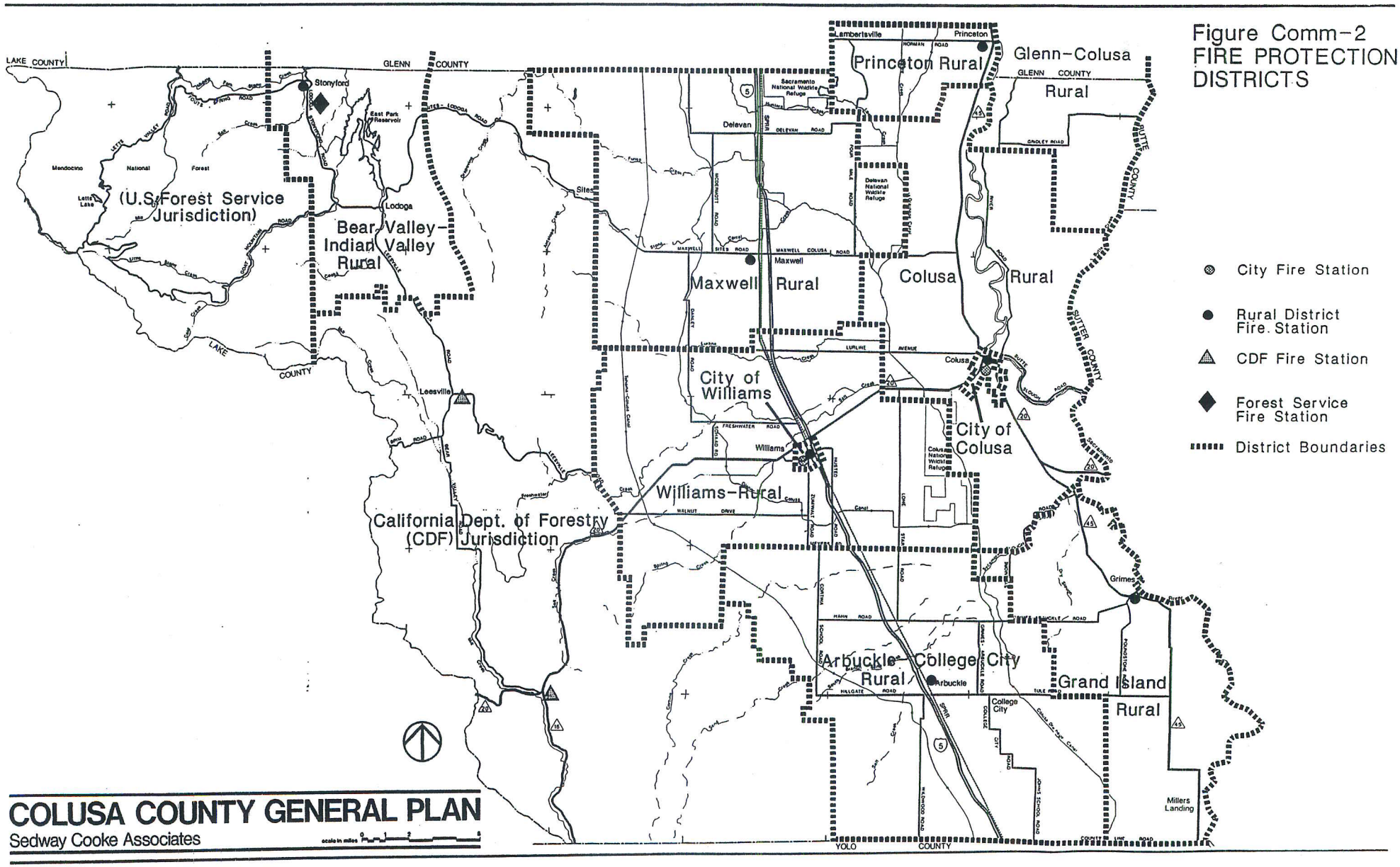


Figure Comm-2
FIRE PROTECTION DISTRICTS

COLUSA COUNTY GENERAL PLAN
Sedway Cooke Associates

(equipment, number of personnel, level of training, pumping capacity); 10 percent is based on communication systems, and 40 percent is based on water supply. ISO ratings in the 8 rural districts and 2 city departments in Colusa County range from 5 to 9. The poorer ratings occur in areas that are not served by a public water system, areas with insufficient equipment, or areas with inadequate water flow capacity.

As a result of high insurance ratings, and high liability and workmen's compensation insurance costs, many of the smaller districts have found it impossible to operate without a financial loss. Often the insurance costs alone exceed the district's entire revenue. In response, some of the districts have been forced to retire vehicles or hold elections for special assessments. Although the special assessments are effective, the smaller districts may not have the manpower to campaign and promote the tax increase. In the future, special types of insurance which accommodate volunteer departments should be pursued.

The county and community land use plans channel growth into those areas with relatively low fire hazards and sufficient water pressure for fire fighting. About 95 percent of the county's growth during the next two decades is projected to occur in areas served by a community water system. As each community grows, rural fire districts and city fire departments will face increased manpower requirements and vehicle needs. Depending on the pace of industrial development, new or expanded fire stations may be needed in the larger communities. As with other public services, large developments which generate the need for new firefighting personnel and equipment should bear their share of the cost. Isolated sites with development are required to provide on-site water for use by firefighters (per the California Department of Forestry fire hazard standards adopted in 1985) and will continue to face this requirement in the future.

District Profiles

Arbuckle/College City Fire Protection District. This district encompasses 124 square miles in the south central part of the county. Staff includes one paid full-time fire chief, one paid full-time fireman, and 32 volunteers. The fire station is located at 506 Lucas Street in Arbuckle and houses four Class A pumpers, one tanker, two brush and grass rigs, a rescue vehicle, and a command vehicle. In 1984, the District had an Insurance Service Office Rating of 5 within the water service district and 8 outside the district. Response time averages 7 to 9 minutes. With Arbuckle's population expected to double by the year 2010, additional equipment and staff will be required in the future. The existing fire station is centrally located and should be maintained over the next two decades.

Bear Valley/Indian Valley Fire Protection District. This district encompasses about 60 square miles in the Bear and Indian Valleys of Colusa County and also extends north about 7 miles into Glenn County. The District's primary role is structural fire protection, although assistance is often provided to the California Department of Forestry in battling grass or range fires. The District also responds to medical emergencies in the Stonyford-Lodoga area and responds to structural fire calls within the National Forest Boundaries. The fire station is located on Market Street in Stonyford and houses the following equipment: one 4500 gallon tanker truck, two 600 gallon/650 gpm Class I pumpers, and three 250 gallon Ford fire trucks, including two four-wheel drive trucks. There are about 15 volunteer firefighters and no full-time staff.

Rising insurance costs have forced the district to take five pieces of equipment out of service, including the vehicle used for medical emergencies. In fact, insurance costs have risen to the point where they alone exceed the district's total revenue by about 50 percent. This is a serious constraint to development in the Stonyford area and there is no indication that financial relief is on the way. Fire hazards are more severe in this area than in most parts of the county due to the terrain and vegetation; fire protection must be one of the foremost concerns in evaluating any development within the district. With the increase in recreational activity in the Forest and continued growth at Century Ranch, fire protection must be made a more urgent priority during the coming decades.

Colusa Rural Fire Protection District. This District encompasses 128 square miles of unincorporated land around the city of Colusa. Staff includes one paid fire chief and 30 volunteers. The fire station is located on Market Street in Colusa and houses a staff car, two rescue trucks, and three smaller trucks. The District's Insurance Service Office Rating is currently under review; the rating is 7 for areas served by municipal or private water systems and 9 in outlying areas. Since the district acquired a 4,000 gallon tanker truck in 1984, the rating in outlying areas may be improved to 8. Residents of the District approved a special assessment in 1986 to cover the rising cost of service delivery, especially insurance costs.

Although moderate growth is projected within the Colusa Rural District, it is recommended that rural areas be annexed to the city prior to their development. Areas such as 14th Street, Colusa Industrial Properties, and Goad's Extension may ultimately be served by the city fire department. Since the two fire departments often work together, the possibility of a combined city-rural fire station should be considered during the next two decades.

City of Colusa Fire Department. Colusa's municipal fire department protects the 1.8 square mile area within the city limits. The City fire station is on Market Street, about 8 blocks west of the Rural fire station. Equipment includes two staff vehicles, two pumpers, one aerial ladder truck, one emergency rescue truck, one reserve pumper, and one mobile light plant. The Department has 6-½ paid staff and 25 volunteers. Paid staff include one chief, one assistant chief, three driver-operators, one fire-fighter, and one part-time dispatcher. The Insurance Service Office Rating is 5.

The Department's resources will need to be increased during the next two decades to keep pace with the community's growth. By the year 2010, most of the developed acreage within the Colusa Rural Fire District will be annexed to the city and fire protection responsibilities will be transferred to the city. Meanwhile, vacant land around Colusa will generally be annexed before it is developed, further increasing the population served by the District. Joint City-Rural District efforts to meet future fire protection needs should be pursued during the coming years.

Glenn-Colusa Fire Protection District. This district provides service to a small, sparsely populated area between the Sacramento River and Butte Creek. The majority of the service area is in Glenn County and the fire station is in Butte City, about 4 miles north of the county line. Development is not likely in this area due to flood hazards, poor access, and a lack of urban services.

Grand Island Fire Protection District. Grimes and surrounding areas receive fire protection service from the Grand Island Fire Protection District. The District operates a fire station on Highway 45 in Grimes and has 27 volunteer firefighters.

Response time varies from five to 20 minutes. The District handles many more medical emergencies than fire emergencies and grass fires are much more common than structural fires. In fact, the last structural fire in Grimes was in 1981. During 1986, the District handled 18 calls.

Grand Island has an Insurance Service Office Rating of 7. Fire and rescue equipment includes a 750 gpm Ford pumper, two 500 gpm Jimmies (1951, 1963), and two 1700 gallon/300 gpm tankers. As in the other rural county fire districts, this district has been burdened with insurance costs that threaten its solvency.

Maxwell Fire Protection District. About 130 square miles in the north central part of Colusa County is contained within this district. Staff includes one part-paid fire chief and about 30 volunteers. The fire station is located at 231 West Oak Street in Maxwell and houses a first aid wagon, four pumpers, two tankers, and two chief wagon/jimmies. The area served by the district has an Insurance Service Office rating of 6 within a 5-mile radius of the station and 8 beyond that radius. Ratings in town might be improved since new water lines have been constructed.

The District handled about 90 calls in 1986, with about half the calls for medical emergencies and half for grassfires. Structural fires are very uncommon. The District is occasionally called on to extinguish fires in rice fields when blowing smoke obscures traffic. At the present time, high insurance costs are the District's greatest concern. In the future, additional equipment may be needed to serve the larger population and greater number of structures. As the town grows, an increasing percentage of calls are likely to be medical emergencies or structural fires.

Princeton Fire Protection District. The Princeton District includes the northeastern part of the county and includes a fire station on Highway 45 in Princeton. The District consists entirely of volunteers and is called upon primarily for medical emergencies and grass fires. About 20 calls were handled in 1986. Equipment includes a water tanker, a pumper, and two small pick-up trucks with pumpers. Although equipment is generally adequate, the District has been troubled by the high cost of insurance and workmen's compensation.

Williams Rural Fire Protection District. The Williams Rural District and City Fire Department jointly operate a fire station on "E" Street in downtown Williams. The District service area covers 136 square miles in the center of the county. The same personnel--one part-paid fire chief and 44 volunteers--operate both the City Department and the Rural District. Response time in the rural areas averages between three and eight minutes. The District operates a chief vehicle, two pumpers, three grass trucks, and one tanker. The Insurance Service Office Rating is 8 within 5 miles of the city and 9 outside that radius.

A substantial amount of growth is projected within the Williams Rural District over the next 20 years. As in the case of the Colusa Rural District, most of the growth areas will be annexed to the city before they are developed and will consequently be served by the City Fire Department. Since the two departments share the same facility, planning for expansion and new equipment should be a joint effort.

City of Williams Fire Department. As documented above, the City Fire Department and Rural District share a common fire station and personnel. Response time in the city averages one to three minutes. The District operates two pumpers and has an Insurance Service Office Rating of 6. Projected residential growth on the south side of the city and industrial and commercial growth to the east could drastically

increase fire protection needs in Williams. The city's population may triple by the year 2010. New industries could bring new fire hazards that could not be dealt with by existing vehicles and manpower. Water lines on the south side will need to be upgraded, additional equipment will be required, and the possibilities for a new fire station site should be explored. The site should be central to areas that are already developed and areas that are expected to develop in the coming years.

State/Federal Responsibility Areas

Wildfire protection in the non-federally owned upland areas, or State Responsibility Areas (SRAs), is the responsibility of the California Department of Forestry (CDF). The CDF has jurisdiction over 293,520 acres in the county. They operate fire stations at Leesville and on Highway 16 just south of the Highway 20 junction. Both stations are manned between June 15 and November 1. Each station has one piece of fire fighting apparatus and is normally manned by one captain and two firefighters. The CDF also assists with medical aid response and structural fire protection in parts of western Colusa County. Response time to a fire varies from two to over 20 minutes.

Wildfire protection within the Mendocino National Forest is provided by the U.S. Forest Service. They operate wildland pumper units and one engine from their station in Stonyford. The Department runs a fuels modification program that has been very effective in keeping the number of fires to a minimum. They work closely with the CDF and rely on the Bear Valley/Indian Valley Fire District for structural fire protection. An engine foreman, driver, and three fire-fighters man the Forest Service Station between June and October. The Forest Service also maintains an unmanned lookout tower on Goat Mountain.

Policies

FIRE-1 When an unincorporated area is annexed to a city, fire protection responsibilities should be transferred from the rural service district to the city fire department.

FIRE-2 Proposed development applications should be referred to the local fire chief for recommendations and comments. Comments should include specific recommendations about equipment, manpower, or facilities that might be required as a result of the development.

FIRE-3 Mutual aid agreements shall continue to be supported between Rural Fire Protection Districts, City Fire Departments, the California Department of Forestry, and the US Forest Service.

FIRE-4 Development which could create a public hazard in the event of fire shall be located away from existing and planned residential areas.

FIRE-5 New development should incorporate design measures which are responsive to the risk of fire hazard in those areas.

EMERGENCY MEDICAL SERVICES

Service Profile

Ambulance and emergency medical services are provided to Colusa County by a private contractor. The contractor provides one ambulance crew in Colusa and a second crew in Williams. Over $100,000 from the County general fund were spent on these services in both 1987 and 1988. Because of the drain this expense has placed on the general fund, creation of a special district to cover ambulance services was presented to the electorate in 1988. Although an advisory measure had passed in 1987, the 1988 funding measure was not approved.

At the present time, Colusa is one of just two counties in northern California with medical personnel trained at the Emergency Medical Technician-I (EMT-I) level. When voters were asked to form a service district to finance ambulance services, they were also asked to form a district that would upgrade medical equipment and training to the EMT-2 level. With EMT-2, technicians would be trained to practice life-saving cardiac therapy and use new medical and communication equipment to be purchased by the county. However, this measure, which had a one-time cost of $75,000, also did not pass.

Policies

EM-1 A numbered address system should be implemented for rural residences so that emergency vehicles can be dispatched more efficiently.

EDUCATION

District Profiles

There are six school districts within Colusa County, including three districts which encompass portions of adjoining counties and three contained entirely within Colusa County. Four of the districts--Colusa Unified, Maxwell Unified, Pierce Joint Unified, and Williams Unified--are governed by the Colusa County Superintendent of Schools Office. The Superintendent's Office is a public agency which operates a variety of academic, business, consulting, and vocational programs, including the education of handicapped children, wards of the Juvenile Court, and migrant pre-school children. The Office serves as an intermediate unit between the State Department of Education and the local school districts. The other two districts in Colusa County--Stony Creek Joint Unified and Princeton Joint Unified--are governed by the Glenn County Superintendent's Office. The schools and district boundaries are shown graphically in Figure COMM-3. Enrollment trends within each district are shown in Table COMM-3.

Colusa Unified. This District has the largest student enrollment of the six districts, with 1289 pupils attending its three schools during the 1986-87 school year. Facilities include Burchfield Primary School (K-3), Egling Middle School (4-8), and Colusa High School (9-12), all located within the city of Colusa. The district has witnessed an 8 percent enrollment increase during the last two years with much of the increase coming at the primary levels. In fact, enrollment at Burchfield Primary

Table COMM-2: School Enrollment in Colusa County[1]

	1984-85	1985-86	1986-87	Two-Year % Increase
Colusa Unified[2]	**1,191**	**1,258**	**1,289**	**8.2**
o Burchfield Elementary	379	422	442	16.6
o Egling Middle	400	410	441	10.3
o Colusa High	356	352	338	(5.1)
Maxwell Unified	**280**	**283**	**298**	**6.4**
o Maxwell Elementary	163	175	184	12.9
o Maxwell High	117	108	114	(2.6)
Pierce Joint Unified	**834**	**854**	**897**	**7.6**
o Arbuckle Elementary	406	392	422	3.9
o Grand Island Elementary	80	84	86	7.5
o Johnson Junior High	150	148	140	(6.7)
o Pierce High	198	230	249	25.8
Williams Unified	**509**	**567**	**556**	**9.2**
o Williams Elementary	231	220	211	(8.6)
o Williams Middle	137	201	205	49.6
o Williams High	141	146	140	(0.7)
COLUSA COUNTY SUPERINTENDENT'S OFFICE JURISDICTION[3]	**2,916**	**3,062**	**3,136**	**7.5**
Indian Valley Elementary[4]	N/A	N/A	30	--
Princeton Joint Unified[4]				
o Princeton Elementary	N/A	N/A	121	--
o Princeton High	N/A	N/A	71	--

N/A = not available

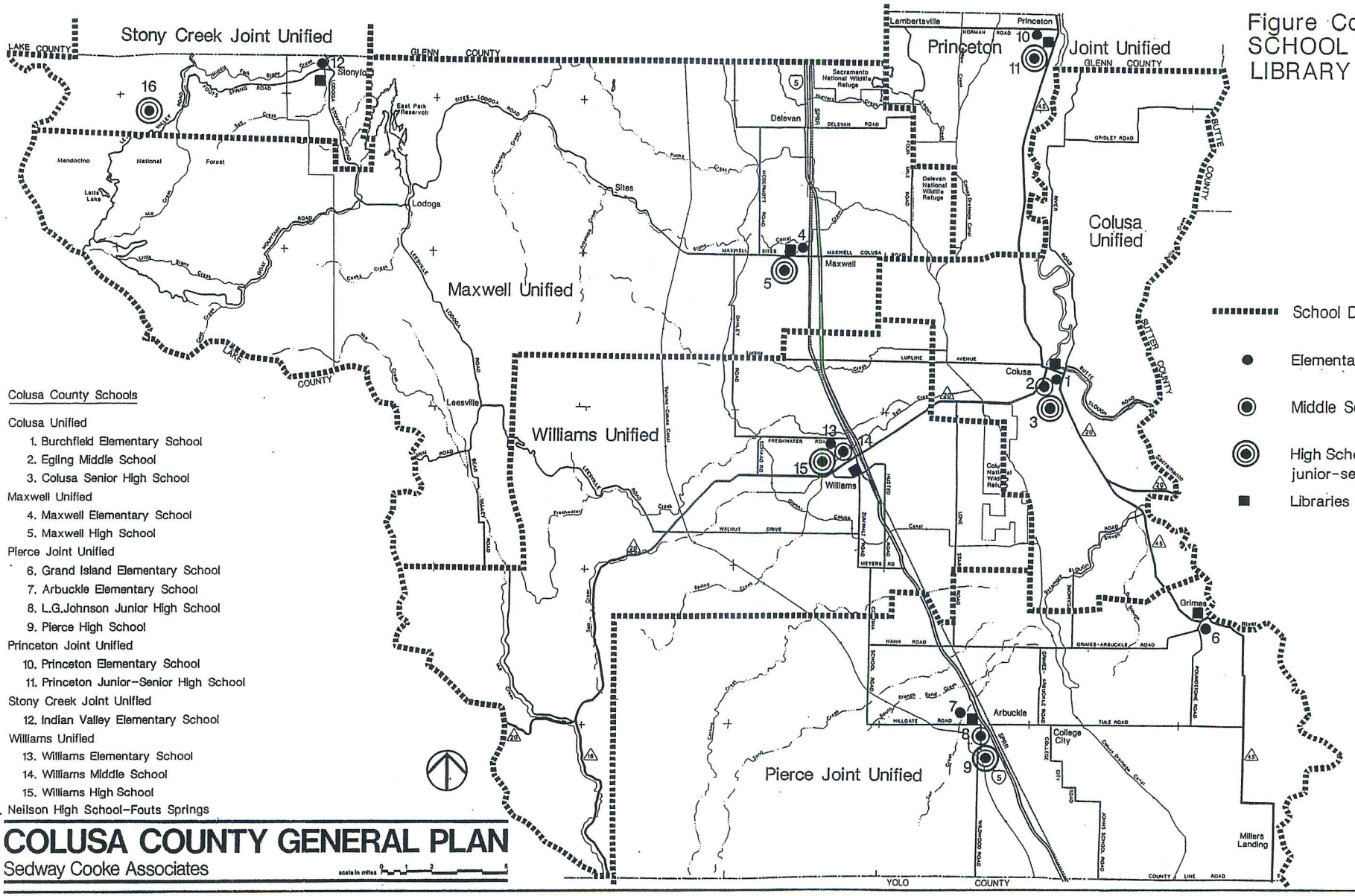
[1]Excludes Our Lady Of Lourdes, a private school in Colusa which enrolled 104 students in Grades K-8 in 1988-89.

[2]includes personalized instruction center

[3]includes Clinton B. Nielson High and special education program; excludes Princeton and Indian Valley

[4]Schools are under the jurisdiction of the Glenn County Superintendent's Office

Figure Comm-3
SCHOOL AND LIBRARY FACILITIE



Colusa County Schools

Colusa Unified
1. Burchfield Elementary School
2. Egling Middle School
3. Colusa Senior High School

Maxwell Unified
4. Maxwell Elementary School
5. Maxwell High School

Pierce Joint Unified
6. Grand Island Elementary School
7. Arbuckle Elementary School
8. L.G.Johnson Junior High School
9. Pierce High School

Princeton Joint Unified
10. Princeton Elementary School
11. Princeton Junior-Senior High School

Stony Creek Joint Unified
12. Indian Valley Elementary School

Williams Unified
13. Williams Elementary School
14. Williams Middle School
15. Williams High School

16. Neilson High School-Fouts Springs

COLUSA COUNTY GENERAL PLAN

Sedway Cooke Associates

has leaped 40 percent in just six years, from 314 students in 1981 to 442 students in 1987. The result has been crowded classrooms, with total school enrollment exceeding capacity by 50 students. The district has added a portable classroom to handle some of the increase and will require additional portables or building space as future enrollment grows. The situation is less critical at Egling Middle School, where 441 students occupy a building designed for 480, and at Colusa High School, where the enrollment of 338 is well below the capacity of 630 pupils. However, as Burchfield students move on to Egling, the Middle School will also experience crowding.

Maxwell Unified. This is the smallest of the four districts managed by the County Superintendent, with a 1986-87 enrollment of 298. The District contains 399 square miles and has two schools: an elementary (K-8) and a high school (9-12). Both schools are in the community of Maxwell, though students from as far away as Century Ranch attend. Enrollment in the district has increased 6 percent since the 1984-85 school year. The elementary school and high school have a capacity of 300 students each, well below the respective enrollment figures of 184 and 114. However, the age distribution of students is very uneven, with some grades enrolling three times more students than others.

Pierce Joint Unified District. The Pierce District covers 435 square miles in the southern third of Colusa County, and includes the northern Yolo County communities of Dunnigan and Zamora as well. There are 897 students in attendance at the District's four schools, which represents a dramatic 34 percent increase over the last five years. The District includes elementary schools in Grimes (Grand Island) and Arbuckle, a junior high school in Arbuckle (Lloyd G. Johnson), and a high school in Arbuckle (Pierce). Enrollment figures were clearly impacted by the construction of 120 new homes in the Almond Paradise subdivision north of Arbuckle during the early 1980s. Construction of the subdivision prompted the development of a 6-room temporary junior high school on the south end of the high school campus, creating additional capacity at the primary school. The District plans to construct a permanent junior high school on the same site before 1990, and has recently received renovation funds for Arbuckle Elementary and Pierce High School. The possibility of an elementary school in Dunnigan has also been discussed, particularly since a number of residential developments are underway in the vicinity.

Williams Unified District. There are 556 students in the Williams Unified District, attending an elementary, middle, and high school on a combined campus within the city of Williams. The District has experienced an 11 percent enrollment increase during the last two years, with most of the increase at the lower grade levels. As a result, fourth grade students have been reassigned to the Middle School, which is only four years old. Crowding problems are exacerbated when the migrant farmworker labor camp is open, particularly at the elementary level. The 211 pupils at Williams Elementary exceed the school's capacity by about 11 students, and the Middle School is just 35 students short of reaching its 240-student capacity. The High School enrolls 140 students, which is well below the building's capacity.

Other Schools. Enrollment in the Stony Creek and Princeton Districts has remained stable over the past few years. Students in Stonyford attend Indian Valley Elementary School, a K-8 facility with about 30 students, or Elk Creek High School (in Glenn County) with about 20 students. Students in Princeton and southeastern Glenn County attend Princeton Elementary, a K-8 facility with 121 students, or Princeton High School, with 71 students. Both of these schools can accommodate additional students without overcrowding.

Colusa County also manages Fouts Springs Boys Camp (Clinton B. Nielson High School), located within the Mendocino National Forest. The Camp was established to rehabilitate and educate juvenile boys that have committed minor crimes and are on probation. Enrollment was 41 students in 1986-87. The County also operates a special education program with students attending classes at Burchfield, Williams, and Arbuckle Elementary Schools, and at Johnson, Egling, and Williams Middle Schools.

Our Lady of Lourdes, a private school in Colusa, enrolls 104 students in Grades K-8 (1988-89). A pre-school associated with Our Lady of Lourdes enrolls 45 students.

Present and Future Needs

Colusa County Schools face the challenge of providing quality academic and vocational training with diminishing financial resources. Demand for increased vocational training, ESL (English as a Second Language), and college preparatory programs have placed the county's smaller schools in a difficult position. In some cases, there are simply not enough students to make these programs viable. The possibility of an all-county high school has been explored--and rejected--by virtue of its high cost and impact on the identity of the county's rural communities.

In response to the problem of crowded classrooms, the Pierce and Maxwell Districts have adopted school impact fees of $1.50/square foot for residential development and $0.25/square foot for non-residential development. Similar fees have been adopted by the Colusa and Williams Districts. The School District has also explored the possibility of keeping schools open year-round on staggered schedules to maximize the use of classroom space. Colusa Unified is also considering the construction of a second elementary school to relieve crowding at Burchfield and accommodate future growth in the city.

County population growth will create the need for new school facilities in some communities and additional classroom space in other communities. More detailed projections of enrollment in each district will be required to determine the exact need for new schools. A brief look at the population projections in the Community Plan Element indicates that Grimes, Princeton, and Stonyford will not require major new facilities in the next two decades. New facilities or additions will be needed in Arbuckle, Colusa, Maxwell, and Williams.

The Colusa and Williams Districts will each require an additional elementary school by the year 2010, and the Williams District may also need to expand the middle school or redistribute grades between the middle school and the new elementary school. The Pierce District is already planning the construction of a permanent junior high school; additions to the elementary school will also be required before the year 2010. The Maxwell District will need to expand the existing elementary school, but should have adequate capacity at the high school through the year 2010.

Although the future land use maps in the Community Plan Element do not show future school sites, the maps may be used as a guide for locating future schools. Since most residential development in Colusa and Williams is planned to the south of the urban area, new elementary schools also should be located in these areas. School sites should either be purchased by the district or dedicated to the district as a condition of approval for large residential developments.

Policies

ED-1 The sharing of resources between small town schools should be promoted so that programs which are infeasible at a school because of low enrollment may become possible.

ED-2 All proposed developments which could have a significant effect on school enrollment should be referred to the school district for review and comment.

ED-3 Future schools should be on sites that are easily accessible to cars, bicycles, and pedestrians; schools should be located within the residential areas that they serve.

ED-4 Cooperative planning arrangements should be made between the County Department of Planning and Building and the local school districts for the exchange of data and the development of school facility plans.

ED-5 Plans or programs which would result in the closure of small town elementary schools should be discouraged. The existing community schools in Grimes, Princeton, and Stonyford should be maintained.

LIBRARIES

System Profile

The County libraries provide books, periodicals, newspapers, and information, and offer a range of recreational, cultural, and educational programs to Colusa County residents. Although only one of the libraries has a community meeting room, the libraries serve as community gathering places and are a focal point in many of the county's small communities. In towns like Grimes and Princeton, the libraries make an important contribution to the community's identity. The library system is part of a 13-county circulation network, providing access to resource materials throughout northern California.

The library system includes a main facility at Colusa, and satellite facilities in Arbuckle, Grimes, Maxwell, Princeton, Stonyford, and Williams. The system has 86,683 books, allocated between the libraries as follows:

Library	Number of Books
Arbuckle	10,886
Colusa	38,118
Grimes	6,291
Maxwell	9,583
Princeton	9,447
Stonyford	1,485
Williams	10,603

There are also over 30,000 other materials in the library, including audio, video, and microfiche materials. The total amount spent on library services in 1986 was $340,000.

A number of the county's libraries--namely Maxwell, Williams, and Arbuckle--have severe space shortgages and obsolete equipment. These libraries have seen circulation grow by as much as three times without any building expansion. In Williams, this has meant that some library programs must be held in City Hall because there is simply not enough room in the library. In Stonyford, the library is outside of town and is not convenient for many of its patrons. The community would like to remodel the old town hall and incorporate a new library and senior citizen center in the refurbished buildings. In Colusa, the 22-year old library building is shared by the County Superintendent of Schools. If the Superintendent's office is relocated, the library may have the chance to expand into the vacated space.

Most of the library buildings face the problem of inadequate electrical systems. As equipment is modernized and computers are installed, electrical systems will have to be upgraded accordingly. Some of the buildings must also be made wheelchair-accessible, particularly where they serve as election polling places.

Like other county departments, the library system suffers from a shortage of funds for capital improvements, materials acquisition, and operation. Because of the county's small population, the libraries find it difficult competing with other California counties for funds. Moreover, the library budgets fluctuate with the county's general fund, which varies widely depending on property values and economic conditions in the county. When agricultural and gas prices drop, the library usually suffers.

Patronage at the libraries has been increasing steadily and will continue to grow during the coming years. Video lending has proven to be very popular, and special reading programs have attracted both children and their parents. In the near future, the County hopes to enhance ties between local libraries and libraries at Yuba College and Chico State. They hope to continue to expand the geneology section of Colusa's library, which already contains a wealth of information on the county's early settlers and homesteads. Other major objectives of the library system are to establish an automated circulation system, to provide a wider range of bilingual resources, and to increase the availability of microcomputers and typewriters for public use.

The combination of population growth and increased discovery of the resources available in the libraries will create a need for additional space during the next 20 years. In some cases, building additions may be needed. If state funding for construction becomes available, new libraries may be a possibility for the larger communities. The greatest increases in demand will be in Colusa, Williams, Arbuckle, and Maxwell, where the combined population may double by the year 2010.

Policies

LIB-1 If new libraries are proposed in any Colusa County community, their locations should be in the downtown areas rather than on the outskirts of town. This will support the objective of keeping downtown the center of community activity and culture.

LIB-2 Investment in new equipment and facilities for libraries should consider both current needs and projected growth patterns.

LIB-3 The County should encourage and support efforts which will increase private donations and State funding for library operation and maintenance, as well as new construction, renovation, and equipment acquisition.

LIB-4 Programs or events which promote the library's role as a community gathering place should be encouraged.

HEALTH CARE

System Profile

Colusa Community Hospital is the only general and acute care hospital in the County. Patients requiring more comprehensive care generally go to Enloe Hospital in Chico, to Woodland, to UC-Davis, or to the Sacramento Medical Center. Colusa Community Hospital was built in the early 1970s, replacing an older hospital building that is now used for administrative storage and doctor's offices. While the new building is in excellent condition and has few facility problems, most of the old building will require substantial remodeling if it is ever reused.

The hospital has 56 licensed beds, with 48 beds available at any given time. The average occupancy rate, based on 48 beds, is 27 percent. There are no plans for expansion, as there is no perceived need to increase the volume of in-patient care. However, the hospital is promoting out-patient care services such as same-day surgery, radiology, cardiovascular exams, and stress tests. The hospital has complete obstetric and maternity services, and has full orthopedic surgery facilities.

The one licensed nursing home in the county--Valley West--is located in Williams. The hospital in Colusa has 6 "swing beds" which can be transferred from their acute care designation to a skilled nursing designation, should they be required for that purpose. On an average day, there are usually two beds used for skilled nursing care. Although the county plans no additional nursing homes or health care centers at this time, a private nursing home has been discussed in Colusa. A proposal has also been made to double the size of the Valley West convalescent home.

Policies

HC-1 Colusa County should support private development of congregate care and nursing home facilities in the communities of Arbuckle, Colusa, Maxwell and Williams.

HC-2 As funding permits, options for re-using or demolishing the abandoned county hospital building should be explored.