



Final Environmental Impact Report

FINAL ENVIRONMENTAL IMPACT REPORT

INTRODUCTION

According to the California Environmental Quality Act (CEQA), a proposed general plan constitutes a project which may "significantly"¹ affect "the environment."² By law, the local jurisdiction is therefore required to prepare an Environmental Impact Report (EIR) which addresses the topics outlined in the State CEQA Guidelines listed below:

- o Description of the project (Section 15124).
- o Description of the environmental setting (Section 15125).
- o The significant environmental effects of the proposed project (Section 15126(a)).
- o Any significant environmental effects which cannot be avoided if the proposal is implemented (Section 15126(b)).
- o Mitigation measures proposed to minimize the significant effects (Section 15126(c)).
- o Alternatives to the proposed action (Section 15126(d)).
- o The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity (Section 15126(e)).
- o Any significant environmental changes which would be involved in the proposed action should it be implemented (Section 15126(f)).
- o The growth inducing impact of the proposed action (Section 15126(g)).
- o Effects found not to be significant (Section 15128).
- o A list of organizations and persons consulted (Section 15129).
- o Cumulative impacts (Section 15130).

¹Determination of "significant effect" is left to the local public entity preparing an EIR but should be based to the extent possible, on scientific and factual data. An ironclad definition is not possible because significance will vary considerably with changes in environmental setting (State CEQA Guidelines Section 15064).

²"Environment means the physical conditions which exist within the area which will be affected by a proposed project including air, land, water, minerals, flora, fauna, ambient noise, (and) objects of historic or aesthetic significance" (State CEQA Guidelines Section 15360).

Despite the fact that a general plan and an EIR are legally distinct documents, their concerns and methods of preparation overlap considerably. For this reason, Section 15166 of the State CEQA Guidelines allows a jurisdiction to integrate the EIR with the local general plan provided that the plan also contains a separate section which identifies where each EIR requirement is addressed.

The Colusa County General Plan is a broad statement of the county's goals for the foreseeable future. Accordingly, the General Plan EIR "need not be as detailed as an EIR on the specific construction projects that might follow" (State CEQA Guidelines Section 15146(b)), and should focus on the secondary impacts of the plan (those which occur later in time or are farther removed in distance but are still reasonably foreseeable).

Because a majority of the EIR requirements have already been met and incorporated into the General Plan itself, this section of the Plan functions primarily as a reference document. It identifies the General Plan chapters and/or sections where EIR requirements are addressed and summarizes significant impacts and mitigation measures.

The Draft EIR was released on March 4, 1988 and was circulated for public review and comment. Responses to comments were prepared and were circulated in July, 1988. This chapter incorporates these responses as well as editorial changes which make the EIR consistent with the revised general plan.

OVERALL SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The Colusa County General Plan is designed to achieve a reasonable balance between the county's potential agricultural and economic role in the Sacramento Valley region and its present small town atmosphere. In striking this balance, the General Plan permits further development of the county's urban communities, and encourages commercial revitalization of the downtown areas. By the year 2010, population in the county is expected to grow to about 23,500. Some of the new residents will work inside the county, while others may work in surrounding counties, which have been growing at faster rates than Colusa.

The Plan allows growth in existing communities, where it can be most easily accommodated. In order to prevent excessive and rapid growth, the plan contains measures which restrict development outside of communities and which generally permit development outside of designated growth areas only after development possibilities within these areas have been exhausted. The plan provides methods of accommodating growth appropriately; however, some impacts are still possible:

- o Improvements to public services will be necessary; if growth occurs more rapidly than expected, public services such as water availability and wastewater treatment could constrain additional growth.
- o Expansion of Arbuckle, Colusa, Maxwell, and Williams could impact existing agricultural operations that are not planned for development and affect the feasibility of large-scale farming on these properties.

- o A repeat of drought conditions comparable to those experienced in 1976-77 could affect the availability of groundwater and create water supply problems given the larger population that will reside in the County in the future.
- o Additional urban growth, even adjacent to existing communities, means loss of valuable agricultural land and an increase in impervious surfaces, which decreases groundwater recharge and increases flood hazards.
- o A change in community character is possible, since the county will be growing more rapidly than it has in the past.
- o Increased traffic will result from additional growth both within and outside of the county; traffic on Highway 20 could worsen in the City of Colusa if the proposed bypass is not constructed by Caltrans in a timely manner.
- o Visual and water quality impacts could occur in the western county if mineral extraction occurs.

DESCRIPTION OF THE PROJECT

State Requirements

CEQA requires this section of the EIR to contain:

- o the precise location and boundaries of the project;
- o a statement of the objectives sought by the project;
- o a general description of the project's characteristics; and
- o a statement describing the intended uses of the EIR.

Each of these concerns is addressed below.

The location of the project is Colusa County, shown in Figure INTRO-1 in the first chapter of this report. A description of the objective of the General Plan--to guide long-range physical development in Colusa County--is also outlined in the first chapter. A secondary objective of the plan is to establish a basis for future transportation, public service, and housing policies, and to provide a sound foundation for regulating the use of land through zoning and subdivision controls.

The Colusa County General Plan identifies locations for future growth and indicates appropriate land uses for each of the locations. Policies are identified to allow compact community growth while maintaining the county's rural lifestyle and protecting its agricultural and other natural resources. The land use plan itself makes 8,000 acres of land in the county available for "urban" development; this is approximately three times larger than the area currently developed in urban uses and is more than adequate to accommodate urban development needs through the year 2010.

The primary use of the Draft EIR was to inform the public and elected officials of the potential significant environmental effects of the project. These effects needed to be understood and considered by the Colusa County Board of Supervisors in its deliberations on the policies, guidelines, and proposals contained in the Plan. The

Draft EIR provided information that allowed the county to recognize the possible side effects of the Plan before taking action to adopt it. The Final EIR incorporates responses to comments made on the Draft document.

ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

State Requirements

CEQA requires these three sections of the EIR to include:

- o A description of the environment in the vicinity of the project, including an understanding of the regional setting and applicable general plans and regional plans.
- o Significant effects of the proposed project.
- o Measures which could minimize significant adverse impacts.

Population and Housing

Conditions and Impacts. This impact area concerns the growth trends and land use activities that affect population density, and the quantity, type, distribution, and availability of housing in the county. These subjects are discussed in the Land Use and Housing Elements and in the Community Plan Element.

One-third of the county's current population of 14,800 people is located in the city of Colusa. One-eighth of the population resides in Williams. A significant portion of the county's population live in unincorporated rural areas. The county has historically been one of the slowest growing areas in the state of California. In the 1980s, however, the county has been growing at a rate more typical of rural California counties. Although the county historically has not grown as quickly as neighboring counties, there are many indications that a more rapid growth rate, consistent with the growth rate of the 1980s, can be anticipated.

The General Plan's population projections are based on the assumption that population will increase during the next 22 years at about the same rate that it did between 1980 and 1987. A total of 23,500 people are expected to reside in the county by 2010. While Williams, Maxwell and Arbuckle will experience the most significant growth, Colusa is projected to remain the largest city. The projected growth rate (58% over 23 years) is much faster than the rate of the 1970s, when the county had a net increase of only 36 people per year.

At the time of the 1980 Census, 309 families in the county, or 8.8 percent, were living below the poverty level (an annual income of \$12,831). Female-headed households and the elderly made up a significant portion of those living below the poverty level. Household size has been increasing countywide, suggesting a strong demand for large, affordable single family homes.

The projected housing need for the period 1987 to 1993 was estimated at 409 units using state data, and at 620 units using local data. Half of these units are needed for

very low and low income households. Approximately one-third will be occupied by those with above moderate incomes. Beyond the year 1993, population growth will continue to generate significant housing demand. 1987-2010 housing demand for the county is projected to be 3,385 units, including 2,700 "urban" units and nearly 700 "rural" units.

The land use plan designates 2,900 acres for "urban residential" development county-wide. Of this, the land which is currently undeveloped could potentially accommodate more than 4,000 new housing units, or about 50 percent more than the "urban" housing demand projected between 1987 and 2010. An additional 3,000 acres of vacant or partially improved land is designated for rural residential development, permitting as many as 3,000 new rural dwellings (including vacant lots within existing rural subdivisions). This also surpasses the projected need for the planning period. Nevertheless, adverse housing impacts can be expected if the housing is not available when needed, if the new housing is unaffordable, and if the units are not suitable for those who are seeking housing.

An additional concern would be the change in community character or shift in the composition of the population which could be brought about by the additional growth. This poses some threat to the county's rural lifestyle; however, the overall size of the county will still be small. Relative to the larger population centers of California, Colusa County will remain overwhelmingly rural and agrarian. It should be noted that the demand for land is not totally within the county's control. The General Plan attempts to accommodate additional growth in a manner that will be beneficial to the county and its residents as it also strives to minimize the inevitable "spillover" impacts generated by development in adjoining metropolitan regions such as Yuba City and Sacramento.

Mitigation Measures. The General Plan contains policies aimed at providing safe, decent, and affordable housing in Colusa County. The policies (see the Housing Element and Community Plans) address the following issues:

- o affordable housing for special population groups, such as the elderly, lower- and moderate-income households, the disabled, farm laborers and female-headed families with children;
- o housing preservation;
- o housing costs;
- o housing supply; and
- o energy conservation.

These policies direct Colusa County's efforts to mitigate adverse housing impacts. Measures that address affordability include policies to participate in state and federal housing programs, permit higher building densities and second units where appropriate, and to encourage alternatives such as non-profit housing organizations. The Housing Element contains policies to encourage rehabilitation of existing homes and to minimize government constraints to development.

Economy and Employment

Conditions and Impacts. This impact area concerns the economic growth trends and land use activities that affect employment density, and the quantity, type, and distribution of jobs. These subjects are discussed in the Land Use and Housing Elements.

Approximately 6,025 people are employed in Colusa County businesses. Agriculture is the staple of the county's economy, directly accounting for one-third of all jobs, and providing the foundation for many support services and industries in other sectors of the economy. Many of the county's manufacturing, retail, and wholesale trade jobs exist to serve agriculture. Agriculture also provides seasonal employment to about 1,600 persons during the late summer and early fall. While job growth was strong during the 1970s, it has fallen behind population growth in the 1980s. Unemployment has risen. During the 1980s, agricultural growth has leveled off and government employment has declined.

The General Plan provides for the protection of the county's agricultural base while allowing some employment diversification and encouraging new year-round jobs. The future growth in jobs will probably be accompanied by a shift in employment composition. The number of persons employed directly in farming will continue to drop, and manufacturing jobs are likely to increase. Since most of these jobs will be in agricultural processing and distribution, the county's economy will still be driven by agriculture. Even the new retail and service jobs created to serve the larger population will be indirectly dependent on agriculture.

The Land Use Element designates several areas between I-5 and Old Highway 99 for future industrial use. It is expected that many of these jobs would complement the existing agricultural economy. Retail employment may also increase, as the Land Use Element designates land in downtown areas for commercial development, and freeway interchanges for "highway commercial" uses.

The overall impact will probably be to increase employment opportunities in Colusa County. However, inviting new growth could have a negative impact on the existing agricultural base if the county's agricultural resources and operations are not protected according to the objectives of the plan. The plan includes policies which restrict growth primarily to areas which adjoin existing communities and to areas where farming is no longer feasible due to encroachment by freeways, power lines, or urban uses.

Mitigation Measures. The policies in the Land Use Element are intended to guide new economic growth in the county. The policies seek to promote development and redevelopment of the downtown retail establishments; to direct highway commercial activities toward the freeway interchanges; and to provide a supply of industrial land for manufacturing and agricultural support. The policies recommend that the County Chamber of Commerce, Farm Bureau, Board of Supervisors and Economic Development Commission work together to determine how to attract agriculturally-compatible business enterprises to the county.

Potentially negative impacts of new industrial uses are mitigated by land use policies which require that industrial areas are not developed until they can be served by sewer and water services, meet fire protection service standards, have access to a major transportation route, and have groundwater available. Policies also ensure that increased public service costs resulting from industrial development be paid for by that development.

By setting forth a logical development pattern which protects and diversifies the County's most important industry--agriculture--the General Plan will likely have a positive overall economic effect on the county. Potential negative economic impacts would be related to the fact that development is directed towards geographical growth areas. These effects are not likely to hinder new economic development in the County, since a more than adequate supply of land is available for new growth. This stable, well-ordered land use plan will do more to protect the County's agricultural economy and attract new, high quality development projects which enhance agriculture than a plan that allows haphazard growth and development. Furthermore, some negative economic impacts will be offset by a tremendous savings in infrastructure and public service costs. The General Plan was developed in part to preserve and enhance the County's economy.

Land Use

Conditions and Impacts. This impact area relates to the changes in the land use patterns and densities caused by the Plan, and the consistency of those changes with other applicable policy documents. This issue is largely covered in the Land Use Element and Community Plans.

The fundamental idea behind the land use plan is that Colusa County's growth should be concentrated in existing communities and not left to "leapfrog" into viable agricultural areas. The plan promotes the development of the vacant gaps within each town before allowing growth to occur in agricultural areas. Figure LU-2 in the plan illustrates proposed land uses.

The General Plan envisions four population centers in the county, organized along the north-south axis of Interstate 5 and the east-west axis of Highway 20. Colusa will remain the largest city and center of county government and services. Williams will remain the county's second largest city, but the gap between its population and Colusa's will narrow. Arbuckle and Maxwell will also grow considerably. Highway-oriented commercial areas are designated at the freeway interchanges in Arbuckle, Williams, and Maxwell. Areas for new industry are planned in all three communities between I-5 and Old Highway 99.

Potential impacts are related to the overall amount of growth that could take place, and where this growth could occur. Of primary consideration is the protection of agricultural lands from unnecessary conversion to non-agricultural uses, and prevention of sprawl through the maintenance of physically separate and distinct communities. The land use designations and policies in the plan do provide for protection of agriculture and prevention of sprawl. However, the plan must be carefully implemented in order to assure avoidance of adverse effects. In addition, the necessary services (water, roads, schools, parks, etc.) must be secured for the planned growth; these subjects are covered under public services.

The land use plan designates 419,000 acres for general agriculture, 183,000 acres for upland agriculture or rangeland, and 114,000 acres for resource conservation. About 13,300 acres are designated for "urban", "rural residential", and "non-urban industrial" uses. This includes land that is already developed as well as vacant land. The amount of land designated for urban uses is greater than that projected for future growth, to provide the real estate market some flexibility. This excess land, while necessary to allow growth to occur, also could induce excess growth.

If all vacant land designated for future growth was actually developed, Colusa County would experience a loss of about 9,000 acres of farmland. This represents a combination of productive, marginally productive, and unproductive farmlands, 98 percent of which is in the immediate vicinity of existing communities or in the I-5 corridor. Some of this farmland is simply infeasible to farm due to man-made constraints; such is the case with several thousand acres sandwiched between Old Highway 99 and Interstate 5. It is very unlikely that this land will be entirely developed by the year 2010. Moreover as land in the I-5 corridor is converted to non-farm uses, dryland in the west valley will be irrigated with water from the Tehama-Colusa Canal. In fact, there is a high probability that cultivated acreage will actually increase and that the gain in acreage irrigated by the canal will exceed the acreage converted to urban use.

Very little of Colusa County is currently used for urban purposes. The communities occupy approximately 2,500 acres, and rural subdivisions (primarily two developments in the foothills) occupy 1,200 acres. The rest of the county is productive and unproductive farmland and rangeland, National Wildlife Refuges, and National Forest land. Table LU-1 from the Land Use Element summarizes existing land uses.

Cropland occupies 358,000 acres, or about one-half of the county's total land area. Ranches occupy about 200,000 acres, just over one-quarter of the county's land area. Agricultural activities are a crucial part of the County's economy. Crop production and values of the leading crops are documented in Tables LU-2 and LU-4 from the General Plan.

While most prime soils are found on the Central Valley floor, the Williamson Act has been applied almost exclusively in the foothill and mountain areas of the western county. In the past, the agricultural lands on the valley floor have not been threatened by development pressures, and there has been no need to extend Williamson Act contracts to these areas. The foothills, however, have experienced some development pressure. Of the 200,546 acres which are now under contract, 10,345 acres are considered prime and 190,201 acres are non-prime agricultural land or open space lands. The General Plan proposals should not affect existing Williamson Act contracts. No cancellations of existing contracts will be required.

Much of the county is to remain unchanged. In fact, the land uses proposed in the General Plan are very similar to the previous General Plan. Most land designated for agricultural use in the previous plan is also designated for agricultural use in this plan. Table LU-6 of the Land Use Element provides a summary of proposed land uses. The proposed plan designates more land for industrial use, primarily along I-5.

New growth will occur primarily in the four communities and to a lesser degree along the I-5 corridor. The western county will remain essentially undeveloped. Total developable acreage in the plan still represents less than 1.4 percent of the county's total land area. Additional conflicts could arise, however, if resource extraction activities (such as mining operations) become prevalent in the western county. Such uses could create conflicts with recreational, agricultural, or scenic resources.

The "Community Planning Areas" designated in the General Plan will include existing communities and transitional lands, some of which are currently productive farmland. Existing undeveloped rangeland is designated "Agriculture-Upland" (range), "Agriculture-General" (if suitable for cropland), and "Upland-Transition".

The "Resource Conservation" category includes all public lands (National Wildlife Refuges, National Forest Lands, Bureau of Land Management, and Bureau of Reclamation lands); it includes some land which is shown on the Existing Land Use Map as Undeveloped Rangeland. Most of what is shown on the Existing Land Use Map as Orchards/Vineyards, Cropland and Undeveloped Bottomland has been designated "Agriculture-General" in the land use plan. However, some agricultural lands in the I-5 Corridor and near communities has been included in the "Community Plan Areas" and in the "Non-Urban Industrial" designation.

Mitigation Measures. Mitigation is addressed by policies and action programs contained in the Land Use Element and Community Plans. These policies identify where growth should occur, uses appropriate to geographic areas, and how the county and other public officials can ensure that growth occurs in an orderly fashion. The land use policies are organized in the following categories:

- o General Development,
- o Conservation,
- o Agriculture,
- o Residential,
- o Commercial,
- o Industrial, and
- o Implementation.

The Community Plan Element identifies policies which are specific to each community. In each of these, the limit of growth is identified (the current utility district sphere of influence or, in some instances, a specifically recommended expansion of the sphere of influence). Development of vacant land within the communities is encouraged, consistent with existing scales and styles of architecture, and downtown retail and commercial development is promoted in order to ensure the economic viability of the downtown areas. New park and recreation facilities are recommended to accompany new development.

Agricultural policies discourage scattered residential subdivisions and promote activities adjacent to agricultural areas which will not interfere with agricultural activities. Policies in the Conservation Element recommend a study of the economic feasibility of extending eligibility of the Williamson Act to the entire county. Agriculture transition areas are established within the community planning areas to provide room for future growth as conditions change within each community.

Development priorities are established to provide flexibility while preventing scattered or haphazard development. The policies indicate the priority of encouraging commercial development in downtown areas before it is allowed on the fringes of communities; within communities before developing agriculture-transition areas; and development of vacant areas designated for urban uses before consideration is given to expansion of existing communities. The plan further indicates a need for physical separation of Arbuckle, Colusa, Maxwell, and Williams, particularly after growth begins to occur. Areas of agricultural open space have been designated between the communities slated for the greatest amount of growth.

Incompatible uses will be separated to the greatest degree possible: new industrial uses and new residential uses are to be separated; new highway commercial areas are not planned adjacent to residential areas, and are to be screened from existing residential areas where possible. In order to assure that the land use plan is carried out as proposed, the plan recommends zoning ordinance revisions to acknowledge the

proposed land uses. Accompanying the zoning revisions, development standards are to be prepared to ensure quality development and design.

Circulation

Conditions and Impacts. This impact area addresses the movement of people and goods through Colusa County, as well as projected increases in travel demand and the ability of the local and regional transportation system to accommodate that increase. The California Department of Transportation (Caltrans) published a Systems Management Plan (SMP) for District 3, which includes Colusa County, to set priorities for future state highway improvements. Because of previous low growth assumptions for the county, the Caltrans SMP proposes very few improvements within the county. In fact, of four alternative funding plans developed in the SMP, only one assumes major improvements in Colusa County: this improvement would be a 2-lane bypass around the city of Colusa, from Highway 20 at O'Hair Road to Highway 20/45 just south of the Colusa Airport, to alleviate projected high volumes of truck traffic in town on Highway 20. This project has been given a low priority by Caltrans.

Traffic volumes on North Highway 45 may also warrant construction of a new road on the west side of Colusa, extending about 3.5 miles north from the proposed Highway 20 bypass near Wilson Road and terminating near Harbison Road. The Highway 20/45 bypass will primarily serve regional traffic. Any work that Caltrans proposes will be accompanied by a series of public meetings and will meet recognized safety standards.

The circulation system is closely related to the land use pattern. Increased development proposed in the General Plan as well as increased regional traffic will result in increased traffic on Colusa County roads and increased maintenance needs. The greatest traffic increases are expected on major roadways such as the I-5 freeway: Caltrans projected that traffic volumes on Interstate 5 and portions of Highway 20 will increase by over 70% by 2010. The added traffic is not expected to overburden the capacity of these roads, however. They currently operate at Level-of-Service A (free flow conditions).¹ With the increased traffic, they may drop to LOS B (slightly restricted flow), which meets Caltrans' criteria for highway operation. It is important to note that most of the increase will come from traffic with origins and destinations outside of Colusa County and will be a result of a larger state population rather than a larger county population. According to Caltrans, traffic on local roads will increase by an average of about 40%. However, the increase will not be evenly distributed on county roads; those closest to the county's four largest cities and to its recreation areas will see much greater percentage increases. The increased traffic may be most significant in communities such as Colusa and Williams, where both local and regional traffic will burden the cities' road systems. In fact, Highway 20 in Colusa may reach LOS E (forced flow) by 2005. Although this projection is the motivation behind the Highway 20 bypass proposal, the project is not assured; whether such an improvement is built will depend on the actions of Caltrans.

¹Level of Service is fully defined in the Circulation Element of the Plan.

Colusa County's road system also faces serious maintenance problems due to severely constrained financial resources. This is more than just a local concern; the county's road system provides mobility to the regional, state and national agricultural markets. Vehicles originating outside the county, which are a significant factor in road maintenance needs, contribute nothing to maintenance costs. Because the General Plan focuses growth in a limited number of areas, maintenance needs on roads in these areas are likely to increase. With an increase in tourism and traffic to the National Forest, maintenance needs on the Stonyford-Maxwell Road are also likely to increase.

Circulation improvements can also have growth-inducing effects; however, major transportation improvements, other than the bypass, are not proposed. Minor improvement and maintenance projects should not induce growth outside of cities. Land use along the bypass should be closely regulated so that it may function as designed--as a free-flowing roadway with minimal number of ingress and egress points.

Most travel demands in the county are accommodated by personal automobiles. A Mini-Transit program provides dial-a-ride service to transportation-disadvantaged people between Colusa, Williams, Arbuckle, Maxwell, Grimes, College City, Sites, and Stonyford-Lodoga. This program is supplemented by a partially-subsidized taxi service. Regional bus service is provided between Colusa and other counties along Interstate 5, with stops available in Williams, Colusa and Maxwell. Transit demand may grow at a greater rate than population growth.

Freight rail service is provided by Southern Pacific. The Colusa County Airport accommodates private planes, primarily for agricultural purposes. The Sacramento River is navigable as far north as Colusa; the river is dredged to provide passage for commercial barges. The Princeton Ferry provides a historic and culturally valuable river crossing to Afton in Glenn County. The Regional Transportation Plan proposed a bridge to replace the ferry. The Central Valley bicycle trail, part of a statewide network for inter-regional bicycle travel, runs parallel to Interstate 5. Biking, hiking, and off-road vehicle routes are addressed primarily in the Open Space Element.

The major pipe and transmission lines in the county are a gas line which parallels Interstate 5, and north-south oriented power lines. A new overhead power transmission line has been proposed to traverse Colusa County along the alignment of an existing power line near Interstate 5. A second power line, the Geothermal Public Power Line, has been proposed along an alignment originating at geothermal energy development projects in Lake and Sonoma Counties and extending to Williams. Although the project is not a certainty, it would have potentially significant environmental impacts within Colusa County.

Mitigation Measures. The Plan contains recommendations for local and regional transportation systems to accommodate the projected development potential. These can be found primarily in the Circulation Element, with additional policies in the Land Use and Community Plan Elements. The Land Use Element provides for growth which would facilitate transit use and development of an efficient circulation system by encouraging compact growth within existing communities. The primary source of increased traffic on Colusa County's highways will be from outside the County rather than from within the County. An increasingly large share of cars using County roads will be traveling between urban centers like Yuba City, Sacramento, Clear Lake, Redding, and Chico. The County is limited in its ability to

mitigate the impacts of increased traffic when this traffic is originating in an area outside the local jurisdiction. However, policies in the plan do stress the importance of interagency coordination in highway planning. Policies also support a close working relationship with agencies such as Caltrans to ensure that regional improvements such as the Colusa bypass are actually built.

Policies in the Circulation Element address the appropriate levels of service for roadways and seeks timing of roadway improvements which neither constrain nor induce growth by suggesting that LOS C conditions exist before improvements be made. The Plan also identifies state, federal, and private sources of funding. Improvements needed to serve private development will be the responsibility of the developer. The Plan seeks use of state, federal, and private funds for transit services for those with unmet transportation needs. Continuation of freight rail service is supported, and the Plan supports restoration of passenger rail service along the West Valley Amtrak line.

Policies in the plan state that new development which generates the need for new roadways or improvements to existing roadways must pay for the need it creates and provide for right-of way dedication as needed for improvements which have been proposed by the county.

Formation of an Airport Land Use Commission is proposed in the General Plan to guide land use decisions and protect public safety, in accordance with state law. The Plan makes recommendations for Scenic Highway Designations, to provide recreation and to protect visual quality. To reduce demands on the roadway system and accommodate people without cars (including children), new development at urban densities should provide sidewalks and sufficient room for bicycles.

While the General Plan provides thoroughfare studies for the larger communities, it also suggests a need for further study to assess the impact of growth on local and regional roads. Environmental impact reports associated with specific developments must provide further information on traffic impacts on a site-specific basis: such study would be absolutely essential for projects which would house a large number of workers or for a project such as mineral extraction in the western county, which is now fairly remote.

The County is currently preparing a Transmission Line Element to mitigate prospective impacts of the Geothermal Public Power Line and other future energy transmission projects. The Element will incorporate policies and guidelines for siting future transmission lines in the county.

Public Facilities and Services

Conditions and Impacts. This impact area concerns the future demand imposed on the county's infrastructure and services by future development. The capacities of existing infrastructure systems and service capabilities, as well as future demands, are discussed in the Community Services Element.

Water Supply. Water is supplied to Colusa County from two sources: groundwater and surface water. All domestic systems in the county are served with groundwater, while most agricultural 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 is the water source for community

water-delivery systems in Arbuckle, Colusa, Grimes, Maxwell, Princeton and Williams. None of the Sacramento River basin groundwater delivery systems currently operates at capacity; however, there are some aspects of the systems which will eventually require upgrading.

In Arbuckle, additional wells will be required by the year 2010 if the town grows as expected. Some of the unincorporated areas around Colusa are served by individual wells, and should be incorporated into the city system. At least one additional well is currently needed to serve outlying areas, and older segments of the existing distribution system will need to be upgraded. In Grimes, capacity appears to be adequate to support the amount of growth shown in the year 2010 Community Plan. Based on growth projections for Maxwell, capacity will be reached around the year 2000. In Princeton, neither the water supply nor distribution systems pose a constraint to development.

Water for Stonyford and Century Ranch is limited; accordingly, very limited development is proposed for the area and any land division must meet certain well water pumping standards. However, Century Ranch may have great difficulty meeting its water needs if the roughly 900 existing vacant lots in the subdivision are actually developed. In the city of Williams, distribution lines on the south side of the city are not large enough, and a program to replace deteriorating or undersized pipes is needed before growth shown in the Williams Community Plan can take place. To support the level of development ultimately envisioned in Williams, new wells, pumps, and storage tanks will be required for the south side of the city.

The county uses a total of 968,000 acre-feet of water per year for irrigation purposes, of which 815,000 acre-feet is provided by irrigation canals. The balance is extracted from groundwater. There are numerous agricultural water suppliers in the county, which are not well coordinated with each other.

Although no significant problems with domestic water supply or delivery are anticipated, water in California must be considered a limited resource. An increased population implies an increased use of scarce water; however, some of the new growth will occur in what are now agricultural areas. Since agriculture is generally the largest user of water, urban growth could actually free up some of the existing supply. Agricultural water users in particular need to be encouraged to conserve water and take precautions which prevent water quality degradation.

Wastewater Disposal. The primary methods of wastewater disposal in Colusa County are on-site disposal (i.e., septic systems) and centralized disposal systems. The areas served by on-site systems are generally rural or agricultural; septic systems which serve commercial and industrial land uses or higher density residential uses may present water quality problems. Grimes, Century Ranch, College City and Stonyford will continue to be adequately served by septic systems, since very little development is planned in those communities. Community collection and treatment facilities serve Arbuckle, Colusa, Maxwell, Princeton and Williams.

About 200 new residential connections could be added to the system in Arbuckle before improvements will be needed. This should occur by the year 2000; adverse impacts could occur if those connections were not put in place in a timely manner. Improvements would also be needed if new industries generate wastewater for the plant. Stormwater infiltration is currently a problem during heavy rains.

Effluent from the city of Colusa's treatment plant exceeds state water quality standards, which currently limits the amount that the plant can discharge. Plant capacity will not be a limiting factor for the next two decades, if the effluent problem is corrected and if major industrial dischargers do not locate within the service area. A 1984 study identified several problems which will continue to pose constraints to development on the city's south and east sides.

In Maxwell, a pipe replacement program has been correcting an infiltration problem and improving plant efficiency. The Maxwell treatment plant capacity is more than double its current usage, and should be sufficient to meet the town's needs through the year 2010. The situation could change if a number of large industrial users moved to town and required hook-ups to the municipal plant. Furthermore, the designation of over 1,000 acres southwest of town for rural residential use could result in a large number of septic tanks and subsequent groundwater quality problems.

Expansion of the collection and treatment systems in Princeton should not be required to meet growth demands during the next two decades.

The treatment plant in Williams currently operates at about half its capacity. About 300 new residential connections could be supported; however, the plant will ultimately need to be upgraded to increase its capacity and improve the quality of treated effluent, which does not meet minimum standards. Infiltration is a problem during storm events. Extension of the collection system will be required if development occurs to the south of the city. The existing plant has a history of odor problems, as it is upwind of the city.

Flooding and Drainage. The Colusa Trough, a low-lying area parallel to and several miles west of the Sacramento River, floods seasonally due to the increase in irrigated acreage west of it. A bill in the California Legislature recently formed a Colusa Basin Drainage District, encompassing parts of Glenn, Colusa, and Yolo Counties. The District is charged with developing a comprehensive plan for flood control in the Colusa Basin. Additionally, the federal government has authorized funds for repair of the Colusa Trough levees in Colusa and Yolo Counties. The Colusa County Flood Control and Water Conservation District was created in 1983 to develop a comprehensive approach to water management in the county. Roadside drainage ditches and culverts are used in most communities in the county. Colusa is the only town in the county with an extensive storm drainage system; the need for improvements has been identified. A large portion of Williams lies in the 100-year flood plain, and development should not be permitted in the flood plain areas unless flood protection measures are taken. The levees along the Sacramento River are maintained by four local levee and reclamation districts as well as the Department of Water Resources. Increased urban development in the county will reduce permeable ground area and require additional storm drainage improvements.

Solid Waste. Four types of waste are generated in Colusa County: residential wastes (about 50 percent of the total), commercial wastes (30 percent), industrial wastes (10 percent) and natural wastes such as agricultural refuse. Industrial waste comes from a single source, and is similar to commercial wastes in composition. There are two landfills in the county, one south of Stonyford and another on Evans Road, and a transfer station south of Maxwell. The Evans Road landfill was recently expanded to accommodate the county's growth beyond the year 2010. It could reach capacity sooner than that date if the county accepts waste from other counties or experiences a large surge of industrial growth. The county's Solid Waste Management Plan was completed in 1975 and needs to be updated, especially in consideration of several state requirements regarding solid and hazardous wastes.

The county is faced with several state mandates for studying the impact of its landfills on the environment. One of the first steps, recently completed, was for the county to prepare a hazardous waste management study as required by the Tanner Bill, to determine methods of disposing hazardous wastes generated in the county.

Police and Fire Protection. The unincorporated areas of Colusa County receive general public safety and law enforcement services from the County Sheriff Department. Personnel resources in the Department are at their limit. New development would increase the demand for safety services. Based on population projections for the county and the current ratio of officers to residents, about 47 sworn officers would be required by the year 2010. The county jail appears to have adequate capacity to handle projected growth. Municipal police departments serve Colusa and Williams. Other law enforcement agencies operate on the Mendocino National Forest and the National Wildlife Refuges. Although the county's crime rate is low, the demand for police services will rise as the county grows, and the types of crimes and accidents may change. The Sheriff Department is already short-handed by two deputy officers and two correctional officers.

Fire protection services are provided by 8 rural districts, 2 city fire departments, the California Department of Forestry, and the U.S. Forest Service. Mutual aid agreements exist between the different jurisdictions. The districts are primarily staffed by volunteer fire fighters. The fire hazards in the county are greatest during the dry summer season, and in the foothill and mountain areas. Insurance Service Office ratings are poor in some districts due to lack of adequate water supply or equipment. Increased growth will increase service demands on the fire districts and city fire departments. New or expanded fire stations may be needed in the larger communities, depending on the pace of industrial development. New personnel will also be needed. Ambulance and emergency medical services are provided by a private company. A problem with response in rural areas is the lack of a numbered address system, which sometimes hinders timely response.

Schools. There are six school districts within Colusa County, three of which encompass portions of adjoining counties. The districts under the jurisdiction of the Colusa County Superintendent's Office have experienced growth of about 6 to 9 percent during the last two years. All of the districts have adopted school impact fees for new development. Growth in the county will require new facilities or additions 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 adjust classes. The Pierce District (Arbuckle/Grimes) is planning a new junior high school, and additions to the elementary school will be required before 2010. The Maxwell District will need to expand the existing elementary school.

Libraries. The county library system is part of a 13-county circulation network in northern California. The system includes the main facility in Colusa and satellite facilities in Arbuckle, Grimes, Maxwell, Princeton, Stonyford and Williams. The libraries will continue to experience increased demands as the county's population grows.

Mitigation Measures. Mitigation measures are prescribed in the policies and implementing actions of the Community Services Element. Water service policies call for the county to ensure that water originating locally is available to the county, and encourage a thorough understanding of the quality and availability of the county's

groundwater resources. New wells are required to meet state water quality standards, and the availability and quality of water will be primary considerations for new development projects. Consolidation of independent water districts is encouraged. Policies in the general plan also recommend that municipal and industrial water be obtained from irrigation canals to avoid total reliance on groundwater for domestic use.

Wastewater disposal policies discourage urban development in communities not served by a central sewer system. Group septic systems are encouraged where rural development exceeds one unit per acre. The Health Department should monitor groundwater quality as development occurs in the newly designated rural residential areas southwest of Maxwell and near the Arbuckle Golf Course. Development standards for wells and septic tanks should be applied in these areas and in other areas where rural residential development is proposed.

The Community Plans channel development away from flood-prone areas. Flood control policies encourage preparation of a countywide drainage and flood control plan. New development would be required to mitigate drainage impacts. The plan encourages development projects which do not require costly flood control structures and drainage improvements. The plan also requires that environmental values be considered in all flood control projects. Financing of flood control efforts is to be through zones of benefit, as well as through acquisition of state and federal funds wherever possible.

Solid waste policies call for an update of the 1975 Solid Waste Management Plan and, while exploring the need for additional solid waste disposal facilities, encourage reduction and recycling of solid and hazardous wastes. Law enforcement policies propose that new subdivisions be designed to foster a sense of community to reduce the likelihood of crime.

The General Plan channels growth into areas with relatively low fire hazards and with sufficient water pressure for fire fighting. Fire protection policies recommend continued operation of mutual aid agreements with neighboring counties. Development applications are to be referred to local fire chiefs for review and comment. Development which could present a hazard in the event of fire are not recommended near existing or planned residential areas. The plan recommends a numbered address system be implemented to facilitate emergency response. The development of additional or expanded library and health care facilities in the county is encouraged.

Geotechnical Hazards

Conditions and Impacts. This impact area concerns the potential effects to development from hazards associated with earthquakes, landslides, subsidence and settlement. Where these potential hazards are known to exist, threats to personal safety and property can be minimized by discouraging development. These issues are covered in the Public Safety Element.

There are no known active faults or any Alquist-Priolo Special Studies Zones within the Colusa County planning area; however, the possibility of a major earthquake on a fault within the county cannot be ruled out. Four minor quakes on an unknown fault in the foothills occurred in May 1985. Still, the best geologic evidence currently indicates that Colusa County would be expected to experience only low-intensity earthquake shaking from a fault outside the County. The maximum credible earth-

quake on the nearest fault would generate groundshaking intensity of VI to VII on the Modified Mercalli (MM) scale. This would result in damage to unreinforced masonry structures and chimneys, with moderate damage to reinforced masonry. An unknown and unexpected major earthquake could cause serious damage, particularly in the City of Colusa where many buildings are constructed of unreinforced brick.

Landslides can potentially occur in the Coast Range mountains and foothills of the western county, which are not heavily populated. Human activities such as excavation and timber harvesting can cause landslides; natural events such as earthquakes or heavy rains also can trigger slides.

Subsidence has occurred in the eastern portion of the county, particularly near Arbuckle. The subsidence, which is probably due to groundwater withdrawal, can create problems with structures and utility connections, particularly if it is not considered in structural design. Similar problems can occur for development on those portions of the county with soils which are highly expansive. The areas with expansive soils and known subsidence are primarily located in the eastern portion of the county.

Highly erodible soils are found primarily in the western portion of the county, although portions of the Sacramento River are subject to bank erosion and orchards in the Arbuckle area can be subject to considerable erosion during heavy rains. Concerns about erosion are primarily related to concerns about sedimentation (when eroded material is moved through and deposited in water courses) and protection of agricultural productivity. Lastly, a major volcanic eruption of Lassen Peak or Mount Konocti could be expected to deposit ash over portions of the county, but serious damage would not occur.

Mitigation Measures. Mitigation measures are specified in the policies and action programs in the Public Safety and Land Use Elements. The policies direct growth away from landslide-prone areas, and require geologic investigations for any development proposal which is located in an area of high landslide susceptibility or known subsidence. The county will promote resource management practices which minimize potential hazards.

Flood Hazards

Conditions and Impacts. This impact area concerns the potential threat to public safety and property from flood hazards. Impacts associated with storms, poor drainage and dam failures are discussed in the Safety and Community Services Elements.

The Sacramento River and several creeks throughout the county are subject to flooding by the 100-year flood. The urbanized area subject to flooding from the Sacramento River includes the communities of Colusa, Grimes and Princeton. The county participates in the Federal Flood Insurance Program, and the Colusa County Office of Emergency Services has developed guidelines for responding to Sacramento River flooding.

Statewide flood protection programs date as far back as the early part of this century. The Department of Water Resources routinely monitors river levels and relays the information to the County Sheriff's Communication Center. A significant problem is the winter flooding of the Colusa Trough: the amount of irrigated agricultural land exceeds the capacity of the drainage ditch and the flooding problem is further exacerbated by uncoordinated levee maintenance. Localized flooding occurs in several communities in the county because of poor natural drainage and inadequate storm drain systems. A large portion of the city of Williams lies within the 100-year flood plain of Salt Creek, and should not be further developed for urban uses until the boundaries of the flood plain are identified and protection measures are taken.

The Colusa County Flood Control and Water Conservation District was created in 1983 to address countywide drainage problems on the basis of "zones of benefit." A drainage "zone of benefit" has been established in the vicinity of Colusa to improve local drainage problems.

Implementation of the General Plan will allow additional urbanization of the county which, for flood control purposes, means that the amount of permeable surfaces for stormwater drainage will be reduced and storm runoff will be increased. The amount of flooding will increase if measures are not taken to drain the additional runoff.

A second type of flood hazard exists in the possibility of dam failure on any of several major reservoirs located on tributaries of the Sacramento River. Inundation from the four dams which could affect the eastern portion of the county could reach the vicinity of Colusa in as short as eight hours or as long as 42 hours. Responses to such an emergency would be coordinated by the state and county offices of emergency services.

Mitigation Measures. Flood hazards are mitigated by the policies and action programs of the Safety, Community Services and Land Use Elements. These measures direct growth away from high-risk areas and force compliance with Federal Emergency Management Agency requirements for development within a flood plain. No urban development will be permitted within the Designated Floodway of the Sacramento River. The primary tool for overall control of existing flood problems and planning for anticipated future increases in runoff would be through development of a countywide drainage and flood control plan, assessing needs and costs of different flood-control alternatives. The plan also recommends that new development mitigate its drainage impacts. Financing of flood control measures and drainage improvements would occur through zones of benefit; development which would require costly flood control measures will be discouraged.

Additional policies focus on establishing procedures for emergency response, including temporary shelters, communication and evacuation. Policies also support interagency and interjurisdictional coordination. The Plan seeks to locate new critical facilities (those facilities that offer essential services in an emergency, such as police and fire stations) away from areas subject to flooding.

Noise

Conditions and Impacts. This impact area addresses the projected change in the ambient noise environment and the extent to which sensitive receptors (such as residences, schools, churches, libraries, public meeting rooms, and other areas where

quiet is important) would be exposed to excessive noise levels. Existing and future conditions are presented in the Noise Element, although it is useful to examine the Land Use, Circulation and Housing Elements to note the recommended development and circulation patterns.

Colusa County is presently a very quiet rural area, and noise is not perceived to be a significant problem. The greatest sources of noise will continue to be vehicles on the highways (I-5 and Highway 20). Low-flying airplanes, agricultural machinery and related industries, and the Southern Pacific railroad also contribute to overall noise levels. Noise in the western portion of the county is limited to traffic noise along steeply sloping grades and off-road vehicle noise in the Letts Lake vicinity. These are very sparsely populated areas and noise is generally not disruptive.

Arbuckle is currently affected by noise in the immediate vicinity of I-5, which bisects it. Noise exceeding 65 dBA affects roughly 15 percent of all Arbuckle residences, as well as a much smaller number of Maxwell and Williams residences. Noise from Highway 20, which runs through Colusa, generally affects land uses within one block in either direction. Several homes in Arbuckle, Maxwell and Williams are also affected by railroad noise. Several noise-sensitive uses, including the migrant labor camp, public libraries, and schools are affected by traffic noise in the county.

Future noise levels are likely to increase slightly with increases in traffic volumes. The Highway 20 bypass of Colusa will alleviate some noise in that community. Urban residential development planned along Highway 20 in Williams, however, may be subject to excess noise unless mitigation measures are taken in the design and construction of the development. Noise in Colusa County would be likely to become a more serious problem only under two possible circumstances: if a new noise source (such as an industrial use) is introduced to an area where residents are accustomed to quiet; or if new housing is built in an area where the existing noise levels exceed the new residents' expectations. Some concern has been expressed over the noise which could be associated with mineral extraction activities which would occur in areas which are now very quiet.

Mitigation Measures. Noise impacts are mitigated by the policies and implementing actions of the Noise, Circulation and Land Use Elements. The primary means of controlling adverse noise impacts is through the establishment of noise/land use compatibility guidelines. These guidelines identify the various levels of noise that are acceptable, conditionally acceptable, and normally unacceptable for different land uses. These guidelines are presented in Table SAFE-3. Additional measures are identified in the Plan, including preparation of noise contour maps and a possible enactment of a noise ordinance. The General Plan attempts to separate noise-sensitive uses from noise-generating uses as much as possible, and suggests that environmental impact reports be required for projects which could adversely affect noise-sensitive uses or which might themselves be vulnerable to existing noise sources.

The Noise Element contains a number of other possible mitigation measures that could be considered by the county and incorporated as provisions in a noise ordinance, as conditions to approval of a development permit, or as mitigation measures required of developers. These measures include landscaping, structural noise shields, noise control equipment for industrial activities such as silencers, site planning to orient noise sensitive areas of a project away from noise sources, architectural design concepts that locate noise sensitive spaces away from noise sources, and acoustical construction techniques such as increased wall mass and stiffness and use of double-glazed windows.

Air Quality

Conditions and Impacts. This impact area addresses the potential increases in air pollutant emissions as a result of development permitted by the Plan. The Conservation Element describes the regional air quality conditions. The region meets federal air quality standards for all regulated pollutants. Local air quality in Colusa County is estimated from measurements at three monitoring stations in the county. Agricultural burning is the major source of air pollutants; it is regulated by the Colusa County Air Pollution Control District according to statewide requirements. The Air Pollution Control District issues permits for agricultural burning.

Mitigation Measures. Air quality impacts are mitigated by policies and action programs presented in the Conservation Element. These measures recommend that the County Air Pollution Control District continue to issue permits for agricultural burning and enforce regulations. In addition, the Plan encourages a compact development pattern to reduce auto trips and promote alternate means of transportation.

Energy

Conditions and Impacts. This impact area addresses the increase in energy consumption generated by the Plan and examines the opportunities to promote energy conservation. This issue is discussed in the Conservation and Circulation Elements. Increased development will result in increased energy use. Moreover, there may be opportunities for new energy development in Colusa County in the Wilbur Springs Geothermal Resource Area.

Mitigation Measures. Energy impacts are mitigated by policies and implementing actions in the Land Use, Circulation and Housing Elements. The Housing Element promotes energy-conserving residential development; the compact development plan proposed in the Land Use Element will minimize additional auto trips, and the Circulation Element policies encourage the development of bicycle and pedestrian paths as an alternative mode of travel. These actions help to reduce travel-related energy consumption.

Water Supply and Water Quality

Conditions and Impacts. This impact area addresses the need for adequate water supplies and the potential for degradation of water quality. Potential contamination of water resources is discussed in the Conservation, Open Space, Community Services and Safety Elements.

The surface water system in the county is made up of natural and man-made drainage systems. Some runoff from the foothills and water from the upper Sacramento River is channeled into the Glenn-Colusa Canal, Tehama-Colusa Canal and the Colusa Drainage Canal. These canals serve as the primary sources of irrigation water. Most of the irrigation water for the county comes from the Glenn-Colusa Canal, which takes its principal supply from the Sacramento River upstream of Colusa County. Some of the runoff from Colusa County and upstream regions recharges the groundwater basin in Colusa County. Groundwater recharge areas are not planned for extensive development. More specific analyses of development's

impact on groundwater must be conducted on specific sites as development is proposed, particularly for industrial or waste disposal projects. Any mineral resource extraction activities which could discharge wastewater would be regulated by the Central Valley RWQCB.

The Bureau of Reclamation has a long-standing proposal to construct a reservoir at Sites. Although water demand will rise in the future both within and outside of the county, the 20-year water supply appears to be adequate at the present time. Because water from a reservoir at Sites does not appear to be essential at this time, the project was determined to be economically infeasible by the Bureau of Reclamation. In any case, the reservoir was not intended to provide additional water to Colusa County.

Water from the Bureau of Reclamation's Central Valley Project canals also serves the National Wildlife Refuges, which are critical wintering grounds to birds traveling the Pacific Flyway. The Bureau of Reclamation does not recognize wildlife as a "beneficial use" of its water, and it is not legally committed to supply that water to the refuges.

Agriculture is the major user of water in the county. Domestic needs are met with groundwater, which is considered to be of good quality. However, some contamination from residues of herbicides has led to concern over downstream water quality. The State Departments of Health Services and Fish and Game have established action programs to correct problems, and the Department of Food and Agriculture has established a rice herbicide control program, administered by the local Agricultural Commissioner. The State Water Resources Control Board and the Central Valley Regional Water Quality Control Board have also been assessing the quality of the Sacramento River water. Concern over injection wells has influenced the county Planning Commission to require further environmental analysis prior to allowing further development of the wells. The U.S. Fish and Wildlife Service has noted that water quality monitoring is needed at the wildlife refuges.

Mitigation Measures. The policies and implementing actions in the Conservation, Open Space, Community Services and Safety Elements address issues of water supply and quality. The policies recommend that the county develop regulations for injection wells to ensure that the saline water does not contaminate groundwater. The policies also recognize the county's limited financial resources to conduct water quality sampling and stress the need for state financial assistance in this area. Additionally, new water supply wells must meet state water quality standards. Coordination with other counties along the Sacramento River has been recommended to assure protection of the groundwater resources.

The General Plan recognizes the importance of an adequate and safe water supply and requires that water quality be considered in the review of new development projects. Policies also promote water-conserving agricultural practices and reuse of water where appropriate. The county will discourage development of a reservoir at Sites, since the project will provide few benefits for the county and extensive environmental impacts. Community Service policies recommend that the county support studies of the groundwater basin and suggest support of water development projects originating in the county only if the county secures first rights. Consolidation of existing water districts where feasible is also recommended.

Biological Resources

Conditions and Impacts. This impact area addresses the potential impacts to environmentally sensitive plant and animal communities in the county. The focus of this discussion, which can be found in the Conservation and Open Space Elements, is on the National Wildlife Refuges and other wetlands resources. Colusa County supports major plant communities: wetlands, including vernal pools and riparian vegetation, valley grassland, chaparral, foothill woodland, and pine-fir forest. These plant communities provide habitat for a variety of wildlife species. The wildlife refuges, the Sacramento River corridor, the Bear Valley Buttes and portions of the Mendocino National Forest provide areas of high raptor nesting.

Freshwater wetlands and marshes are found along the Sacramento River and in the National Wildlife Refuges: these areas serve as critical wintering grounds for migratory birds traveling along the Pacific Flyway, particularly since available wetland areas have diminished at astonishing rates in recent decades. Rice farms also provide some habitat for migrating birds; however, neither the refuges nor the rice farms are flooded long enough to permit the growth of other water-dependent plants which are an essential food source to the birds.

Vernal pools, listed as a rare and threatened natural community by the California Natural Diversity Data Base, can be found throughout the county. Examples of the Great Valley Riparian Woodlands, also a rare and threatened natural community, can be found along the Sacramento River. Some rare, endangered, or candidate plant and animal species are found in the county. These are listed in the Conservation Element. Among these are a population of native perennial grasslands near Salt Creek about six miles west of Williams.

Fish habitat has been reduced due to factors such as bank alterations and filtering screens at upstream irrigation pumping stations. A program to design fish screens to mitigate interference with fish migration has just been initiated.

Many of the county's fish and wildlife resources exist primarily because of the lack of intensive development throughout the county. Future development could adversely affect the plant and animal communities, as well as rare and threatened species, if it occurs without adequate precautions.

Mitigation Measures. Biological resources are protected through the policies and implementing actions of the Land Use, Conservation and Open Space Elements. These policies call for preservation of biological resources and habitat in the county, including wetlands, using Resource Conservation and Agricultural land use classifications. The county will continue to encourage the use of private lands fronting the Sacramento River for agriculture, resource conservation, and low intensity recreation in limited locations. Lands occupied by rare or endangered plant or animal habitat, including the native perennial grasslands near Salt Creek, are to be maintained in open space.

Cultural and Historic Resources

Conditions and Impacts. This impact area addresses the potential disruption of cultural and historic resources as a result of implementation of the Plan. This issue is covered in the Conservation Element. Colusa County has several historical structures, some of which are listed on or are eligible for the National Register of Histor-

ic Places. Colusa County also contains several California Historical Landmarks. The county also has abundant archaeological resources, particularly in the city of Colusa which is built on the ruins of an extinct Indian settlement.

Native Americans inhabited much of the Central Valley, particularly along the banks of perennial streams. Village sites, including several near Grimes, exist along the Sacramento River. The western foothills and Bear Valley are highly sensitive areas of archaeological potential. Some areas of moderate sensitivity exist in the vicinity of Stonyford, Stony Creek, and East Park Reservoir, and along major water courses such as Funks, Cortina, Sand, and Hyphus Creeks. Century Ranch has been identified as possibly containing archaeological resources.

It is important that the remaining historic and archaeological resources are not destroyed by new development. Historic structures are an important reminder of Colusa County's heritage and archaeological sites have significant educational and cultural value. Cultural and historic resources could be disturbed by new development during the excavation of land for new sites or the razing or alteration of historic buildings for new buildings. While most sensitive areas of the county have been designated for agriculture or other open space uses, new growth is planned for the city of Colusa. The potential for damage exists as construction occurs.

Mitigation Measures. The policies and implementing actions in the Conservation Element address the protection of cultural and historic resources. The Plan recognizes the importance of preserving some of the links that Colusa County has with its distant and recent past. Policies encourage the preservation of historical sites and structures through application for landmark status or National Register listing, and re-use of structures, where appropriate. One recommended mitigation measure calls for an archaeological survey for development projects which could damage archeological resources in areas where such resources are believed to be present.

Other Natural Resources

Conditions and Impacts. This impact area is concerned with the managed production of resources. These issues are discussed in the Conservation and Open Space Elements. Colusa County contains timber lands, mineral deposits and geothermal resources. Development of resource areas with urban uses or other uses which could conflict with resource extraction could cause important resources to become unavailable for future utilization.

The timber lands are not a designated Timber Resource Zone, although some harvesting does occur. No additional road building is planned. The county is the second largest producer of natural gas in the state, with the gas fields occurring in the southeastern portion of the county. Potentially significant deposits of gold exist in the western mountains. Several geothermal springs may be suitable for energy development.

Mitigation Measures. Policies in the Conservation and Open Space Elements call for the conservation of the county's natural resources, and encourage the use of resources where extraction activities will not degrade endangered plant and animal populations. The Plan recommends that a study be conducted of the potential for geothermal energy development. The General Plan also supports the Mendocino National Forest Plan, which identifies resource management uses for land in the

Mendocino National Forest. Significant mineral extraction projects should be subject to site-specific EIRs which address environmental impacts in greater detail.

LONG TERM SECONDARY IMPACTS

Growth-Inducing Impacts

The availability of relatively inexpensive buildable land, planned and zoned for development, could induce considerably more growth than that which is desired by most county residents. Rising land prices in Sacramento and the Bay Area could trigger a migration of business and industry to the large development areas shown in this general plan. This in turn would induce population growth in excess of that projected. The most serious effects of such growth would be the loss of agricultural land, reduced tolerance for local agricultural needs, interference with adjacent farm operations, and the loss of community identity. Other effects would be increased development pressure in areas which are largely unsuitable for urban uses, traffic, and overburdened public services. Because these impacts contradict the basic objectives of the general plan's policies, development that produces such results could not occur without amendments to the plan.

The General Plan attempts to avoid this type of growth by proposing that development be concentrated in existing communities. While the Plan does allow some extended growth along I-5, it proposes unified development standards to guide the character and quality of growth. It also suggests that land that is planned for growth not be zoned for development until development proposals are made. It also restricts the subdivision of farms into "ranchettes" and discourages any development that poses a hardship to agriculture.

Although the General Plan proposes land uses which could ultimately increase the county's population substantially, the magnitude of the changes proposed is far less than those proposed in most Central Valley counties. If managed properly, the growth that does occur should be beneficial. For instance, the General Plan encourages commercial uses to locate in the downtown areas of communities. Development in existing business districts, particularly if it spurs additional growth, would be considered a beneficial growth-inducing impact, since it would revitalize deteriorating downtown areas.

The project would eventually require improvements to utility and road systems in some communities. These improvements could induce growth by accommodating additional development beyond that which already exists. It is important to recognize, however, that road improvements may be made for increased traffic generated outside of the county. To the extent that these improvements exceed the generated need, some growth would be induced. This is unlikely, however, given financial constraints faced by Caltrans, the agency which would finance regional roadway improvements.

Due to the dispersed nature of development in the Sacramento Valley, it is not likely that development in Colusa County would induce further growth in any of the surrounding counties; however, it is important to keep in mind that the communities of Colusa County are within commuting distance of job centers in surrounding counties. To the extent that housing (or jobs) are available in Colusa County, it is

possible that additional demand for jobs (or housing) could occur in surrounding areas. The effects of such growth are not expected to be significant.

Cumulative Impacts

Cumulative impacts are those which result from the project considered in conjunction with those resulting from additional growth already occurring in the vicinity, and from additional growth which might be induced by the project. These impacts could include greater increases in traffic, air pollutants, and noise, increased burdens on public facilities and utilities, and additional commitment of non-renewable resources.

The addition of jobs and residents also must be considered in a discussion of cumulative impacts. As previously suggested, new Colusa County residents may work in nearby counties; conversely, people who work in Colusa County may live in other nearby counties, creating an increased burden on the public services of those counties without contributing significantly to the costs of those services.

Most cumulative impacts would be related to increases in traffic and the overall efficiency of the transportation system, as well as the conversion of agricultural land to urban uses. Again, the degree to which such factors affect other counties is not known, and any guess would be highly speculative. The overall level of development proposed in Colusa County is minor in comparison with the development which is planned in surrounding counties. Thus, relative to the region, the cumulative effects of this General Plan should not create an undue burden on the local or regional services or environmental resources.

Cumulative impacts include increased loss of agricultural lands to urban uses both within and outside of the County. Overall, however, impacts on the agricultural sector would be positive. Because the General Plan directs growth to less productive agricultural land and because policies specify that priority should be given to agricultural support uses and to businesses which enhance agricultural activities, the cumulative effects on the county's economy should be positive. Growth will diversify, stabilize, and complement the agricultural sector. While growth in surrounding counties could put development pressure on Colusa County agricultural operations and could compete with local agricultural support industries, the General Plan contains policies that strengthen agricultural industry to counter such adverse effects.

The county should remain cognizant of growth in other counties which could adversely affect planning in Colusa County, since development in surrounding counties could cause greater problems in Colusa County than development in Colusa County would be likely to cause in surrounding areas. One indicator of the surrounding growth is the projected increase in traffic on state and federal highways; projected percentage increases in traffic on I-5 and Highway 20 far exceed projections for local streets. Likewise, population projections for adjoining counties--especially Yolo, Lake, and Sutter, far exceed those for Colusa County.

Short-Term Versus Long-Term Effects

State CEQA Guidelines (Section 15126(e)) require that an EIR include a description of the relationship between short-term and long-term environmental effects due to a

proposed project. In the case of the Colusa County General Plan, the reasons for adopting the plan now, rather than at some time in the future, are clear. The county has enjoyed a very slow pace of growth and, until recently, has not been forced to address issues of long-term protection of its resources. Growth pressure from surrounding areas, particularly the expanding Sacramento Metropolitan area, indicate that Colusa's resources may be threatened in the future. By adopting the General Plan, the County can accommodate a reasonable amount of growth in an environmentally appropriate manner. If implemented properly, the plan will maintain the integrity of existing communities while facilitating a much-needed boost in downtown commercial activity. It also will provide protection for the County's agricultural and other natural resources in the face of mounting pressure for rural-residential development. If a new General Plan were not to be adopted, the County would not be equipped with a regulatory basis for guiding development into appropriate areas. The result could be scattered rural residential development, haphazard non-residential growth, and exacerbated economic problems. This could in turn detract from Colusa County's natural beauty, resource-based economy, and agricultural character.

Significant Irreversible Environmental Changes

The Colusa County General Plan would result in changes brought about by urban growth; most of these changes are irreversible. Although the Plan encourages growth primarily within the service areas of existing communities, some of that growth will occur on what is now undeveloped or agricultural land. Agriculture is a valuable and sensitive resource, and its conversion should not be taken lightly. Land cannot be brought back into agricultural use once it has been urbanized.

In addition to the loss of agricultural lands, new development will be accompanied by increased pavement coverage, possibly reducing recharge areas and increasing flood hazards. This result is also effectively irreversible.

A separate issue involves the effects of mineral extraction, which could occur in the southwestern portion of the County. The visual and water quality impacts of mining a mountainous, undeveloped area would be conspicuous. Although much progress has been made toward reclaiming mined lands the success of such programs has not been significantly tested. Furthermore, once the ore is taken, it can not be replaced, nor can the materials excavated in the process of mineral extraction be replaced. Finally, most changes that will take place under the General Plan will involve commitments of non-renewable energy, both during construction of projects and after the actual occupation of new homes and businesses.

ALTERNATIVES

This section identifies alternatives to the proposed project and discusses environmental impacts associated with these alternatives. Over the course of the general plan program, a number of alternatives were examined. It was recognized that Colusa County had limited control over the size of its future population, that births, deaths, and migration were factors that could not be significantly influenced by local land use policy. Thus, the alternatives generally made the assumption that a year 2010 population of 23,500 was a "given". The real choice was not "How big do we want to

grow?", but "Where do we want to put the growth that is coming?." Alternatives focused on different distributions of future population and employment within the county rather than different quantities of population and employment.

Preferred Alternative

The proposed General Plan, or the preferred alternative, concentrates future development around the communities of Arbuckle, Colusa, Maxwell, and Williams. Rural-residential development is strongly discouraged, as such development has been acknowledged to be counterproductive to agriculture. Large vacant areas for industry have been designated around the four "growth" communities; agricultural industries are preferred in these areas, although agriculturally-compatible industries are also viewed as desirable. The preferred plan departs from the historical trend in which the city of Colusa captured most of the county's industrial and residential growth. Although Colusa is still to remain the county's cultural, commercial, and governmental center, an increasing share of population and job growth is to shift to Williams and Maxwell. The preferred plan also places strict limits on growth in the western half of the county, recognizing that this area has limited water resources and road access.

Several modifications were made to the preferred alternative during the Draft Plan review and adoption process. The result of these changes is that policies regarding the phasing of growth and the development of new rural residential areas are more flexible than they were before. In addition, the total supply of developable land has increased slightly. Finally, policies encouraging public acquisition of riverfront lands have been stricken. It is believed that acquisition might have negative economic impacts and that increased public access could harm rather than conserve the plants and animals that live along the river.

No Project Alternative

The No Project Alternative assumes that the County rejects the proposals and provisions recommended by this plan and continues to follow the policies of the 1970 Plan and the 1974 update of the Land Use and Conservation Elements. This would be problematic, as the 1970 Plan reflects very different conditions than the 1988 Plan.

The earlier plan does not acknowledge the development pressures faced by the county today, as it could not foresee the increasing influence of the Sacramento and Yuba City-Marysville metropolitan areas on Colusa County. Nor could the earlier plan foresee the economic hardships now being faced by Colusa County farmers, or the fiscal constraints now being faced by county government. The earlier plan also did not recognize the overwhelming desire to keep the county's smaller communities rural; for instance, the 1970 Plan proposed central water and sewer systems in College City. Conversely, the old General Plan does not acknowledge the need to diversify the local economic base and attract industry to the county. Industrial land use designations are limited and few policies in that plan support today's paramount objective of bringing new job opportunities to the county.

In terms of land use, the differences between the old plan and the proposed plan are significant. On a county-wide level, the old plan used an extensive and complicated system of land use categories to classify agricultural and resource lands. The classification system was applied according to natural resource data and ownership

patterns that have become outdated. At the community level, the 1970 Plan did not contain community-specific land use plans for Arbuckle, College City, Grimes, Maxwell, Princeton, or Stonyford.

Within the Colusa and Williams spheres of influence, the "no project" alternative would limit opportunities for new industrial and residential growth. The impact would be much greater in Williams than in Colusa, since the 1970 Plan and 1987 Plan for Williams are much more divergent. Without the new general plan, the county would lack the basic foundation needed to attract industry to the I-5 Corridor in Williams.

Because the No Project alternative does not address many of the County's objectives, it is not considered to be viable. The intent of the County in undertaking this comprehensive planning program has been to overhaul the 1970 Plan and to give thought to the function and character of the county. As a result, the policies of the new Plan offer more guidance and serve to address potential impacts proactively. Decision-making without a clear vision of the future has been acknowledged by Colusa County residents to be undesirable; the new plan provides a firm foundation from which such decisions can be made.

Colusa Growth Center Alternative

This alternative assumes that the city of Colusa becomes the primary area of residential, commercial, and industrial growth in Colusa County between now and the year 2010. This could be accomplished by limiting the area in Arbuckle, Williams, and Maxwell for residential and industrial growth and by restricting rural residential development. Under this option, more than half of the total growth in the county over the next 25 years would occur in the city of Colusa. The city would annex the land within its primary sphere of influence and would encourage single family residential development on most of the annexed land. New industrial growth would be centered near the airport and along South Highway 45.

Additional commercial development would occur along Highways 20 and 45, and a Highway 20 bypass would be built south of the city. Under this hypothetical scenario, Colusa would experience a 125 percent increase in population, requiring the expansion of the sewage treatment plant and the construction of new schools and other public buildings.

Even with Colusa as the leading growth center, Williams would be likely to double in size, and would also experience a large amount of industrial and residential growth. As in Colusa, the growth would mean that major improvements to schools and utilities will be required. Growth within Arbuckle would be more modest, with development limited to the areas already served by sewer and water. Maxwell would grow at a relatively slow pace, with new housing limited to properties within the utility district boundaries. Some commercial and industrial development would be encouraged around the I-5 Maxwell interchange, but the amount of development is not great enough to require expansion of the sewer and water systems.

Under this alternative, Princeton, Grimes, and College City would experience very modest growth. No large-scale development would occur in the communities, but each year construction of a few homes could be anticipated on the remaining vacant lots. No major improvements to sewer and water systems would be required. The same would be true in Stonyford-Lodoga, where construction in some of the existing

subdivisions (Century Ranch and East Park Lake View Acres) would bring the total population of the area up slightly by the year 2010.

Although there are many positive benefits that would result from concentrating the county's future growth in a single community (more cultural and health care opportunities, easier provision of public transit, more efficient provision of some services, etc.), this alternative has a number of negative points. First, residents of Colusa do not appear enthused about a plan which would focus all of the county's future growth in their community. Conversely, residents of Williams and Maxwell would not favor a plan which limited their opportunities to capture some of the county's future industrial and residential growth. Such a plan would increase traffic, crowd schools, and probably cause drainage problems in Colusa; indirectly, such a plan could lead to higher crime and a loss of the character that makes the city of Colusa unique. Colusa also has sewer and water system problems that would need to be addressed before this alternative could be implemented. These factors were among those considered by the General Plan Citizen's Advisory Committee in their rejection of this alternative.

Dispersed Growth Centers

Rather than concentrating growth in a single city or in the freeway corridor, this alternative would encourage dispersed growth throughout Colusa County. This alternative assumes that the appeal of "small town living" will create a demand for new housing in Grimes, Princeton, College City, and the rural farm areas. Although the population increases in these towns would seem small relative to the county's total growth, each of these communities could nearly triple in size under this alternative. In Grimes, this would require construction of a central sewer system, while in Princeton, this would require expansion of the city's sewage treatment ponds. Under this alternative, both of these communities would fully develop the non-floodway portions of their utility district boundaries and then expand outward. In College City, most of the vacant parcels in the original townsite would be developed with rural residences. In all three communities, most of the growth is residential, but commercial uses are encouraged in the underdeveloped "downtowns" of each community.

The greatest changes, however, would come in the rural farm areas--for instance, the orchards south of Arbuckle and along the Sacramento River. Rural areas would experience at least a 20 percent increase in population from increased development of ranchettes, small "hobby" farms, vineyards, large-parcel ranch subdivisions, and growth in places like Delevan and Sites. With more lenient growth policies in the rural area, the west county could experience a 50 percent increase in population.

The remainder of the county's communities would still experience significant growth under this alternative. However, only 66 percent of the county's residential growth occurs in Arbuckle, Colusa, Maxwell, and Williams, compared with 94 percent in the Colusa Growth Center Option and 95 percent in the preferred plan.

This alternative is viewed as problematic for a number of reasons. First, it would induce traffic on rural county roads, and would require costly utility improvements in communities with limited financial means. Second, it would strain the county's ability to provide services, especially services such as fire protection, emergency medical care, and education. Third, and most significantly, this alternative would disrupt agriculture and would result in consumption of more farmland than any of the

others. These were some of the factors listed by the General Plan Citizens Advisory Committee in their rejection of this alternative.

No Growth Alternative

The No Growth Alternative would result in virtually no growth over the next 22 years. Each community would remain as it is today, with negligible commercial and industrial growth. In this instance, the only housing that would be built would replace homes that were either demolished, abandoned, or destroyed by natural disaster. Population in the year 2010 would be 14,800, just as it is today.

Although the impacts of this alternative would be negligible, there are several reasons why the No Growth Scenario is not a very practical option for Colusa County. First, there is a consensus among community residents that at least some level of growth is desirable to stimulate the local economy. Second, a "no growth" alternative would make it difficult for those born and raised in Colusa County to find jobs and homes locally. Third, it is not likely that the county can remain isolated from the growth pressures that affect Woodland, Chico, Yuba City-Marysville and other urban areas of the North Valley. Colusa County is not an "island" but is instead an integral part of one of the state's fastest growing regions. Fourth, development approvals have already been given to projects which make population and employment increases inevitable. Some of these projects were approved more than 20 years ago, while others have been approved within the last two or three years. In some cases, lots have already been sold and roads have been built in these areas; it would be extremely difficult to completely prohibit development over a 25 year period.

