Ranchettes: The Subtle Sprawl

A Study of Rural Residential Development in California's Central Valley

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by Tim Dunbar

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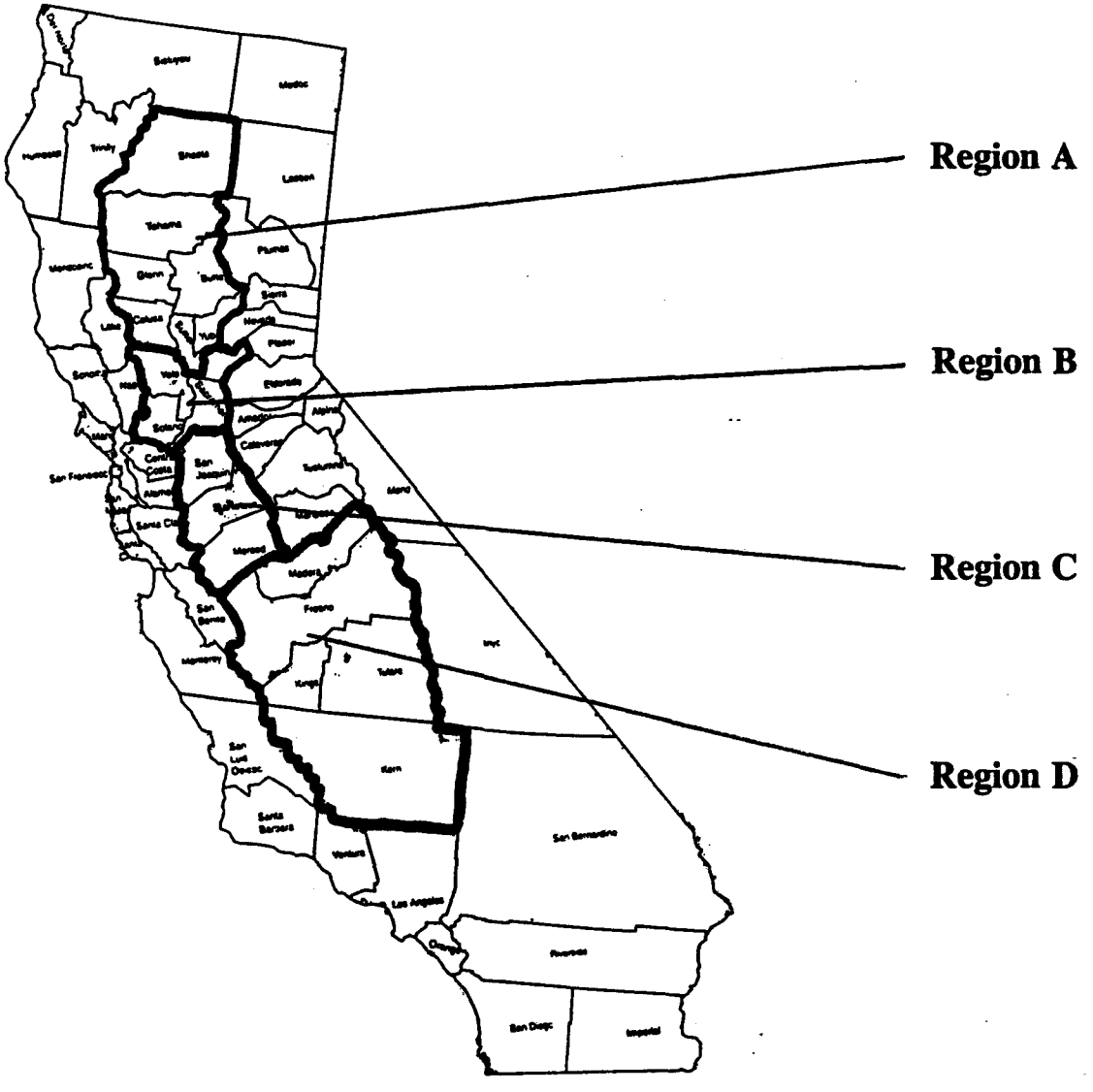
American Farmland Trust

American Farmland Trust is the largest private, nonprofit conservation organization solely dedicated to protecting our nation's agricultural resources. Founded in 1980, AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment.

STUDY AREA



EXECUTIVE SUMMARY

California's Central Valley is the nation's most important and most threatened agricultural resource. The valley's rich soils make it possible for farmers to produce hundreds of different crops and commodities worth $17 billion each year to the state's economy. But crops are not the only things that California is growing. Its population is also increasing; the very factors that make the valley perfect for farming are also incentives that attract new residents. The valley's population is expected to grow from five to 11 million people within the next four decades. This growth rate—similar to that of many developing countries—threatens the world's most productive source of food.

The majority of the Central Valley's population lives in urban areas totaling more than 1,236 square miles. Yet that number does not tell the full story. What are not counted are the rural-residential parcels. These residences, also known as "ranchettes," dot the rural landscape and affect everything from routine farming practices to how often law enforcement can patrol a neighborhood. The California Department of Conservation's Farmland Mapping and Monitoring Program, the best official source of information on the state's farmland inventory, fails to track rural development at this low level of density. Yet, by its very nature, a ranchette removes more land from agriculture than any higher density suburban dwelling.

Before American Farmland Trust's *Ranchettes: The Subtle Sprawl, A Study of Rural Residential Development in California's Central Valley*, referred to herein as the "Central Valley Ranchette Study" (CVRS), there was no accounting of rural residential development in the valley. It was not known how many ranchettes there were, the total amount of land they affected, or how they impacted local communities financially. It was this lack of concrete data regarding rural development that led AFT to initiate the Central Valley Ranchette Study. Some of the study's most important findings are:

- 189,368 rural parcels, totaling 1,270,048 acres, were identified as meeting the study's size and land use criteria within the 18-county study area. The majority of these rural parcels are less than five acres in size.

- 78,787 of these rural parcels, encompassing 543,361 acres, were identified as being developed with a single-family residence. A rural population of 196,968 residents can be estimated as living on these properties. This works out to 2.75 acres for every resident, almost 20 times the amount of land used by the Central Valley's urban residents.

- 456,000 acres (45 percent of farmable acres) within the study area have been lost from potential farming use due to parcelization. These losses were responsible for the estimated loss of 35,200 direct and indirect permanent jobs.

- $2.017 billion in total direct and indirect sales is lost annually due to the reduced agricultural production on small rural lots. Of that, $729 million is in loss of annual personal income.

- It was found that on the average, the net cost to counties to provide public sector services to an undeveloped parcel increases $331, from $23 to $354 ($208 county; $146 school district) once it has been developed.

Three things became apparent from this study. First, there are a lot of small rural parcels currently existing in the Central Valley. Second, ranchettes are an inefficient and wasteful means of housing the valley's projected future population. And finally, on the average, these small rural parcels become financial detriments to the counties in which they are located when they are developed with a single-family residence. While it may be a desirable lifestyle, "country living" will not help house California's burgeoning population and the people who build residential dwellings in rural areas should pay the true costs—both monetary as well as environmental—for living there.

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INTRODUCTION

The Threat to Central Valley Agriculture

California is the nation's number one "ag state," and has been for more than 50 years. It produces more than 350 different crops and livestock commodities and provides 55 percent of the nation's fruits, nuts and vegetables, as well as 25 percent of all table food consumed nationally. California's 1996 farm and ranching receipts were $24.5 billion, almost twice the amount produced by the nation's number two farming state, Texas.

Agriculture in California directly generates employment for more than a half-million people and stimulates economic activity in other industries. In 1996, agricultural support industries such as processing, packaging and transportation are estimated to have generated an additional $85.7 billion for California's economy as a direct result of agricultural production.

California's Central Valley, comprising the Sacramento and San Joaquin valleys, stretches more than 430 miles from the Tehachapi Mountains in Kern County north to the foot of Mt. Shasta in Shasta County. Averaging 50 miles in width, the valley is about the size of England.

The agricultural production of the Central Valley alone exceeds that of the nation's second largest ag state—Texas.

In 1996, agriculture in the Central Valley contributed $17 billion to the state's economy and generated an estimated additional $60 billion worth of business in support industries such as food processing, trucking and farm supplies. If the Central Valley were considered a state, it would rank second in agricultural production behind California.

The valley's rich soils make it possible for farmers to produce hundreds of different crops and commodities. But crops are not the only things that the valley is growing. Its population is also increasing, and the very factors that make the valley perfect for farming also attract new residents and the need for more housing. These facts are quite evident in *Farming on the Edge,* a 1997 report from American Farmland Trust (AFT). This report—which notes those counties with concentrations of prime and/or unique farmland that coincide with rapidly developing areas—lists California's Central Valley as the nation's most threatened agricultural region.

Thirty-four million people live in California, with an additional 25 million expected to be here within the next four decades. During this same time period, the valley's population is expected to grow from five million to 11 million people. This growth rate—similar to that of many developing countries—threatens the world's most productive source of food.

Currently the majority of the Central Valley's population lives in urban areas that total more than 1,236 square miles.[1] This urban development pattern is anticipated to continue growing at a rate of approximately 15,000 acres annually.

American Farmland Trust's Central Valley Ranchette Study

Yet these numbers on urban land uses do not tell the full story. What are not counted in these totals are the rural residential parcels. These residences, also known as "ranchettes," dot the rural landscape and affect everything from routine farming practices to how often law enforcement can patrol a neighborhood.

Unless denied for health, safety or environmental reasons, people who own legal, rural parcels may build a single family dwelling on them regardless of the zoning. Also, it was once a common practice throughout the valley to split off the family farmstead along with a few acres from the production acreage. That is one reason for the existence of so many two- and five-acre parcels with houses on them, listed by local assessors as agricultural, spread among the 40-, 80- and even 160-acre agricultural zoning areas.

By its very nature, a ranchette removes more land from agriculture than any higher density suburban dwelling.

There is no statewide tracking of rural development. The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP), the best official source of information on the state's farmland inventory, fails to track rural development at this lower level of development density. Yet, by its very nature, a ranchette parcel removes more land from agriculture than any single higher density suburban dwelling.

It was this lack of concrete data regarding rural development that led American Farmland Trust to initiate the Central Valley Ranchette Study (CVRS), formally titled *Ranchettes: The Subtle Sprawl.* We believe that this study, funded by grants from the Mary A. Crocker Trust, S. H. Cowell and James Irvine foundations, and EPA will provide accurate and impartial information on the extent of rural development and its impact on local agriculture. This information will help local officials make informed decisions and allow them to properly evaluate the need for additional ranchette expansion in their county. As the nation's principle nonprofit farmland conservation organization, AFT—active in California since 1982—is well suited to study and report on the ranchette phenomenon.

The Central Valley Ranchette Study team was made up of AFT staff as well as outside consultants. Staff members were responsible for determining the number of rural parcels within the study area that were between 1.5 and 20-acres in size as well as the land use designation for each parcel.

Brian Muller, an Assistant Professor at the University of Colorado, Denver, conducted a Geographic Information Systems (GIS) analysis of agricultural production on small rural lots in the Fresno area to determine how many of these parcels are still farmed. Mr. Muller was part of the GIS consulting team that participated in AFT's Central Valley Growth Futures Alternatives Study (CVGFA). This study estimated the impact of projected population gains to the year 2040 on 11 Central Valley counties. These findings are available in AFT's 1995 report, *Alternatives for Future Urban Growth in California's Central Valley.*

Strong Associates—an Oakland, California-based economics consulting firm—evaluated the impacts of rural residential parcels on the fiscal health of the study area's counties. The principal of this firm, David Strong, an urban and agricultural economist with more than 20 years experience, also worked with AFT on the CVGFA study.

"Five acres, five miles from town."

What is "Rural"?

There are a variety of perceptions and differing concepts defining the rural lifestyle. Some see it as a farmhouse isolated from distant neighbors. Others envision a string of houses on small lots along a narrow backcountry road. Ranchette owners may consider their homes "country living at its best," while detractors point to these as places that are "too big to mow and too small to grow." Calvin Beale, one of the nation's foremost rural demographers, puts it this way: "five acres, five miles from town."[2]

California State law defines rural areas as land which, taken together with adjoining areas, has a population of less than 20,000 people. In 1990, based on this definition, 9.8 percent of all California households lived in rural communities.

The U.S. Bureau of Census defines rural as an area having 2,500 people or less. Using this definition, 7.2 percent of California households lived in rural areas in 1990.

The Department of Conservation identifies rural lands, de facto, by defining urban or built-up land as land occupied by structures with a building density of at least six dwelling units per 10 acres. This works out to be one dwelling unit or more to 1.5 acres of land. The remaining land that does not meet this urban and built-up density criteria is considered as rural land.

What are Ranchettes?

Rural residential development goes by many names and comes in just about every size and shape depending on the age of the dwelling and the income of the owners. The media calls many of these rural dwellings "ranchettes" as a way to differentiate them from farmhouses and other structures that are required by farmers and ranchers to work the land. Reed Karaim coined one of the best descriptions of these rural dwellings.[3] According to Karaim, ranchettes are "a diminutive that captures the sense of big dreams writ small."

Ranchettes are "a diminutive that captures the sense of big dreams writ small."

For the purposes of this American Farmland Trust study, ranchettes are defined as follows:

Ranchettes include all existing rural parcels, both developed as well as undeveloped, ranging from 1.5 to 20 acres in size, whose primary land use is listed as residential by the local tax assessor.

METHODOLOGY

The Central Valley Ranchette Study was made up of four separate components:

- Literature search for comparable studies
- Rural parcel identification and evaluation
- Small lot agricultural identification, and
- Small lot fiscal impact analysis

The following is a description of the methodology used for each of these components.

Literature Search for Comparable Studies

Study researchers utilized the University of California library system as well as online reference locations such as AFT's Farmland Information Library (www.farmlandinfo.org) to search for and review comparable studies on rural residential land uses. The following are the findings of this search.

For more than a decade American Farmland Trust has studied how various land uses affect the fiscal health of local municipal budgets. However, only two of these studies have focused specifically on rural residential development. The first to do so was *Residential Growth in Loudoun County: Density-Related Public Costs.* This 1984 report compared different land uses—residential, commercial/industrial, and farmland/forestland—as well as residential development at urban and rural densities. Researchers found that:

"Relatively low-density residential development (one to five or more acres per dwelling unit) generates higher net public costs primarily because it requires inefficient expenditures for public school operating, instructional and transportation services, and also because it creates potentially higher public liabilities for road maintenance and future provision of public water and sewer services."

In 1997, AFT's Center for Agriculture in Environment released *Living on the Edge: The Costs and Risks of Scatter Development* (report available at www.farmlandinfo.org) This report defined three patterns of scatter development that are typical of growth in the greater Chicago area. Using case studies that reflected these patterns, the study found that the homes in scatter development areas:

- Do not generate enough taxes to educate the children that live there;
- Fall woefully short of paying to maintain the roads leading to and through their subdivisions; and,

- Where municipal water and sewer services are available, the cost of building that infrastructure may be paid for by other taxpayers.

Dr. Darryl Goehring, a planner with Sacramento County, California, also looked at the ramifications of rural residential development. As part of that county's review of this land use, he wrote a series of working papers in 1992 and 1993. One of these papers reviewed the impacts that ranchettes have on public sector infrastructure and concluded:

- Ranchette-zoned land is typically underutilized and not fully built out, even at the low densities permitted.

- The county's relatively few rural residents can have a disproportionate impact on the cost of public services.

- The presence of ranchettes in the path of growth adds 8.8 percent to the cost of sewers for growth, or 5.2 percent to the cost of an extended and rebuilt interceptor.

- There are inconsistencies with respect to public policy towards road usage. The result is that financing policies create an incentive for development to be situated outside of urbanizing areas.

- Ranchette development impacts the road system and air quality disproportionately relative to urban development because rural residents must rely entirely on the automobile for mobility and must travel greater distances to work, schools and shops.

- Ranchette residents generally are situated outside of the fee and special assessment districts that are used to fund road improvements and pay virtually nothing for off-site improvements, but they have the highest number of trips per housing unit, the longest trip lengths, and are virtually committed to use autos for even the most mundane purposes.

- Utility pricing policies spread the relatively high cost for rural developments and rural on-lot infrastructure among all users. Financing practices which displace the actual cost of infrastructure provide no constraint on building location and density.

- The density levels of ranchettes impact response times for sheriff patrols.

- As with police services, fire protection degrades in ranchette land use areas. The actual level of fire services loosely varies with proximity to an urban area.

A 1978 report by Arnold Bateman, *Local Public Impacts of Rural Residential Development: A Case Study in the Rapid City School District of South Dakota,* also addressed the rural residential question. Mr. Bateman discussed the variety of forms that rural development might take and examined "the economic, social and environmental benefits and costs of each."

Ranchette development impacts the road system and air quality disproportionately relative to urban development because rural residents must rely entirely on the automobile for mobility and must travel greater distances to work, schools and shops.

Bateman focused his efforts on a new rural residential development project located five miles south of Rapid City, South Dakota. His case study of this rural residential subdivision with 40 existing homes concluded that:

- The county would realize a slight annual surplus in revenue—approximately $17.39 per dwelling unit—over expenditures incurred because the residents were paying separately for private water, sewage disposal and garbage pickup. It should be noted that costs for county-provided protective services such as police and fire were not included as a public expenditure since the project size did not exceed a specific threshold that would have required hiring additional personnel or building new facilities.

- At the same time, the school district, after receiving property tax revenues as well as additional state monies, would realize a deficit of approximately $400 per dwelling unit. This deficit was directly attributed to transportation expenditures incurred by providing extra busing service.

Bateman also summarized the results of the following studies:

Gretna, Nebraska[4]
Comparing compact to scatter pattern development on the southwest fringe of Omaha, Nebraska, researchers came to the following conclusions:

- Private development costs for scattered development were on average $21,349 greater per structure than those for compact development.

- Public costs for schools and fire protection were higher for scattered development. Higher school costs were attributed to transportation expenditures incurred by providing extra busing service for families living in the scattered development area.

- A total of 263 bushels of food grain were lost for each house built in a scattered pattern.

- Additional environmental costs were incurred because of the widespread use of septic tanks in the scattered development pattern.

- Increased crime was noted in areas where scattered development occurred.

Copley, Illinois[5]
While income to the private sector increased when agricultural land was converted to residential use, the public sector did not fare as well. Two out of the three areas studied incurred deficits relative to property tax costs. Researchers stated that "a one-acre residential lot and dwelling unit does not generate sufficient property tax revenue to offset the property tax costs that would be incurred to maintain the existing quantity and quality of public services, as measured by per capita tax levy."

Rice Lake, Wisconsin[6]

Here, researchers found that "construction of new residences is not always cost free for the other residents in the area, if the desired public services are provided." One compelling finding was that "there are many other factors that should be considered when deciding where residential development should go. Many of these factors are considered potential land use conflicts and might be classified as non-monetary social and economic costs." The study lists some of these potential land use conflicts as:

- Residential complaints: *dust, farm machinery noise during evenings and early morning hours, odors.*
- Farmer complaints: *increased traffic on country roads, livestock and crop problems caused by neighboring children and their pets.*

A 1978 study by the Institute of Urban and Regional Research at the University of Iowa[7] reviewed the choices people make between rural and suburban residences. The study's researchers came up with the following three consumer classifications to describe new rural residents: "suburbanites," "exurbanites" and "precluded."

Respondents wanted to live "in the country" even when country living conflicted with their strong desires for economy and convenience.

A ***suburbanite*** lives near the urban fringe in a type of rural housing that offers the same amenities found in most suburban neighborhoods. These included "the presence of good schools, open space, reduced crime, lack of pollution, neighbors of similar background, the overall quality of housing and neighborhood, and the availability and cost of public services."

An ***exurbanite*** prefers residential locations at greater distances from the metropolitan fringe, where "developments are comprised of large lots and the number of homes is generally less within any given tract. Incomes of this group are higher than those of typical suburbanites. This group has been shown to be attracted to a rural lifestyle by reduced property taxes, more control over the levels of public services, increased open space, large lot size, privacy and natural surroundings."

Precluded homeowners choose rural residences only because other suitable alternatives are not available in urban areas. "If housing is cheaper in rural areas because it is less desirable or less well maintained, then households with lower incomes may regard it as a way to enter the housing market."

The University of Iowa study was conducted to determine the behavior by which urban single-family-housing residents choose a housing location. Respondents rated various factors inherent to both rural and suburban housing such as distance to jobs, schools, taxes, etc. One of the more interesting variables revealed by the study was termed by researchers as the "rural mystique." Respondents wanted to live "in the country" even when country living conflicted with their strong desires for economy and convenience found in more urban settings.

Rural Parcel Identification and Evaluation

There are several governmental programs that track rural/agricultural land uses in California: the U.S. Census of Agriculture, the USDA's Natural Resources Conservation Service's National Resources Inventory, the California Department of Water Resources' Crop Data Reports, and the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP).

The 1992 U.S. Bureau of Census' Census of Agriculture, which defines farms as having sales of $1,000 or more per year, identified 23,473 farms totaling 404,198 acres that were smaller than 50 acres in size within the study area. Of this number, 8,067 of the farms totaling 34,782 acres were listed as smaller than 10 acres. *(See Table 1.)*

Table 1

U. S. CENSUS OF AGRICULTURE

Counties	Farms <10 Acres			
	1992		1997	
	#	Acres	#	Acres
Butte	531	2,380	550	2,337
Colusa	62	235	57	242
Fresno	1,116	4,687	1,065	4,430
Glenn	150	706	164	707
Kern	364	1,284	314	1,034
Kings	224	852	203	804
Madera	172	745	170	689
Merced	382	1,678	411	1,745
Placer	339	1,556	311	1,357
Sacramento	432	1,685	421	1,571
San Joaquin	892	3,959	862	3,783
Shasta	224	964	261	1,138
Solano	198	908	190	870
Stanislaus	1,068	4,733	962	4,372
Sutter	225	954	197	865
Tehama	240	1,040	251	1,077
Tulare	1,216	5,347	1,180	5,285
Yolo	116	525	139	627
Yuba	116	544	148	675
TOTALS	**8,067**	**34,782**	**7,856**	**33,608**

The 1997 Census of Agriculture identified only 22,168 farms totaling 379,568 acres smaller than 50 acres in size within the study area. Of this number, 7,856 of the farms totaling 33,608 acres were listed as smaller than 10 acres.

While denoting a reduction of small working farms in the Central Valley, these figures are based on statistical samplings of respondent surveys and are not the most accurate reflection of small agricultural parcels within the study area. Only considering rural parcels that are smaller than 10 acres in size and listed by local assessors as "agricultural," AFT's Central Valley Ranchette Study identified

16,466 parcels totaling 97,886 acres. This is more than double the number of parcels and nearly three times the acreage listed by the U. S. Census Bureau.

An analysis of these parcels shows that 6,480 of them, totaling 40,032 acres are developed with a residence. The question of developed vs. undeveloped aside, 764 of these agricultural parcels totaling 1,310 acres are smaller than two acres in size; 5,591 parcels totaling 19,406 acres are in the two to 4.99 acres category; and 10,111 parcels totaling 77,169 acres are in the five to 9.99 acres category.

FMMP has tracked land use changes throughout much of California since 1984. The program biennially reviews aerial photographs coupled with soil survey data provided by the USDA Natural Resources Conservation Service to determine the current land use of 10-acre minimum mapping units.

While the USDA has not yet surveyed every county, the majority of the Central Valley and coastal counties are recorded and tracked. The program separates land uses into four categories: farmland (which includes five subcategories); urban and built-up land; "other" land; and water.

"Urban and built-up land" is defined as land occupied by structures with a building density of at least six structures to a 10-acre parcel, or approximately one dwelling unit to 1.5-acres.

It is in the remaining land use categories, "agricultural" and "other land" that the valley's rural-residential parcels can be found. *(See Table 2.)* A check by researchers of county assessors within the study area revealed that while many

Table 2

1996 FARMLAND MAPPING & MONITORING PROGRAM DATA
CENTRAL VALLEY RANCHETTE STUDY AREA COUNTIES

COUNTIES	URBAN LAND	FARMLAND	WATER	OTHER LAND	TOTAL ACREAGE
BUTTE	38,862	531,602	21,048	326,398	917,910
COLUSA	4,176	577,861	1,951	84,630	668,618
FRESNO	89,272	950,252	4,146	79,525	1,123,195
GLENN	5,360	585,103	6,117	252,547	849,127
KERN	96,415	2,780,360	9,846	2,334,764	5,221,385
KINGS	27,227	850,774	65	12,719	890,785
MADERA	22,594	783,349	5,833	49,267	861,043
MERCED	30,181	1,176,729	16,914	37,595	1,261,419
PLACER *	34,994	186,670	5,118	184,748	411,530
SACRAMENTO	146,902	407,712	18,648	62,821	636,083
SAN JOAQUIN	69,733	789,728	10,263	42,875	912,599
SHASTA	30,010	446,947	5,560	538,694	1,021,211
SOLANO	50,971	378,036	52,238	101,125	582,370
STANISLAUS	49,179	401,756	5,499	21,810	478,243
SUTTER	10,618	356,342	1,762	20,718	389,440
TEHAMA	10,757	952,658	6,152	869,928	1,839,495
TULARE	46,680	1,305,137	4,509	229,541	1,585,867
YOLO	24,471	564,033	7,371	57,578	653,453
YUBA	11,104	237,574	6,590	156,550	411,818
TOTALS	**799,506**	**14,262,623**	**189,630**	**5,463,833**	**20,715,591**

* Includes land outside CVRS study area

assessors maintain the raw data necessary to identify ranchette parcels, their ability to access and disseminate this data for outside research purposes is severely hampered by manpower constraints and accessibility limitations.

It is common for small nonconforming lots to exist side by side with larger parcels within a single zoning overlay.

A similar review of county planners demonstrated that planners are largely dependent on assessor data for identifying individual ranchette parcels. While planners do maintain property-zoning data, this data is generally accessible only via land use maps, and for the most part planners are unable to readily accumulate countywide acreage totals by zoning category. Since it is common for small nonconforming lots to exist side by side with larger parcels within a single zoning overlay, map data alone is misleading. To avoid overstating the potential for additional ranchettes this study did not take into consideration zoning overlays and only counted existing parcels that met the study's size and land use criteria.

Unable to obtain consistent data on ranchette parcels from official sources, the decision was made to use data from MetroScan, an information processing company that provides parcel data to the general public. Utilizing their services, AFT accessed December 1996 assessor data for parcels within the study area ranging from 1.5 to 20 acres in size.[8] (*See Table 3 for example of MetroScan parcel data.)*

Table 3
Example of Data Available from MetroScan *

(* fictitious addresses shown)

Parcel #	Address	Land Use Code	Acreage	Assessed Values			Sale Amount	Transaction Date	Williamson Act	Exemption
				Land	Improvements	Total Value				
093 140 51	14413 N Pine Tree Rd	421	1.52	$4,501	$83,667	$88,002		5/8/91		HOMEOWNERS
107 180 14	5806 N Water Rd	401	1.90	$13,488		$13,488	$11,683	6/6/94	YES	
248 146 17	23688 Tin Pan Rd	411	2.00	$11,847	$160,055	$171,902		1/25/95		HOMEOWNERS
297 123 16	24556 Grant Line Rd	411	2.00	$74,950	$144, 141	$219,091		2/27/90		HOMEOWNERS

Based on the MetroScan data, parcels were eliminated from consideration as potential ranchette home sites if the parcel's land use code indicated:

- Non-developable land
- Roads
- Rights-of-way
- Wastelands
- Urban development
- Commercial property
- Industrial property

- Government property
- Wildlife habitat with a conservation easement
- Resource extraction operations
- Timber production
- Specialty farms
- Livestock operations
- Agricultural support or storage operations

Researchers made an evaluation on the remaining parcels to determine whether or not they were developed with a single-family residence. Parcels were listed as developed if the information provided by MetroScan indicated:

- A homeowner exemption
- Land-use designation codes that represented an existing residential structure, and
- Assessed values on structural improvements exceeding $20,000

If a parcel did not have a street address, it was assumed to be undeveloped, unless the MetroScan data provided conflicting information such as a homeowner exemption, or a structural improvement value exceeding $20,000 to $30,000 (depending on the county).

While determining how prevalent ranchettes are in the Central Valley, a problem arose on how best to differentiate between a house that actively supports neighboring farm operations from a "ranchette." After all, a farmstead that houses a farming family today can just as easily house a long-distance commuter family tomorrow. In addition, there is the question of "ag" parcels that are smaller than 10 acres in size. At what point do these small parcels quit being economically viable agricultural parcels and become vacant land waiting for new ranchettes to happen?

At what point do these small agricultural parcels quit being economically viable?

With this in mind, it would be easy to just term "ranchettes" all of the existing 189,368 rural parcels that meet the study's size and land use definitions. However, this would give the perception that all of these parcels were used or are going to be used as residences for families that were not actively involved with farming the land.

To clearly define the distinction between a commuter residence and a farmstead or small farm, a set of terms have been applied. All of these categories include both developed parcels as well as vacant land. The distinction between developed and undeveloped only pertains to the question

of how many residents are currently living on these rural parcels and how many more there could be without any rezones.

- The term **"ranchette"** is used for those properties, both developed and undeveloped, whose primary land use is listed by the county assessors as residential.

- **"At-risk"** applies to those rural parcels that are smaller than 10 acres in size but are listed with an agricultural land use on the local tax rolls. This category includes both developed and undeveloped parcels and covers what is often referred to as farmsteads.

- A final category, **"threatened,"** covers agricultural parcels, both developed and undeveloped, that range between 10 and 20 acres in size. This group is listed as such because these parcels sometimes sell for prices comparable to smaller acreage rural parcels that are currently zoned for residential use.

Many counties in the study area are in the process of creating GIS[9] data files that include current parcel information. Where available, researchers used this data to confirm and, if necessary, adjust the MetroScan data.[10]

Informational Surveys

In an attempt to corroborate MetroScan data, and to assist with defining how ranchette development affects local issues, a series of informational surveys was distributed to:

- County planning departments

- County assessor offices

- County agricultural commissioners

- Resource Conservation District (RCD) managers

- Environmental organizations

While the information received from these surveys provided no quantitative data, it did provide researchers with a broader picture of ranchette development in the valley.

By utilizing the information provided by MetroScan and from discussions with county planners, researchers identified the existence of 189,368 rural parcels totaling 1,270,048 acres that meet the study's criteria and are listed by county assessors as either single-family residences or agricultural parcels.

Researchers evaluated this data to identify which of these parcels supported agricultural operations, such as farmsteads or productive farmland, and to differentiate them from residences. After trying several different methods, it was decided to use the land use designations supplied by county assessors. Not only

did these provide the more conservative numbers but they also compared favorably with small farm data provided by the 1997 U.S. Census of Agriculture.

Small Lot Agricultural Identification

To better understand how parcelization affects production agriculture, a GIS map noting parcel boundaries and crop placement in the greater Fresno-Clovis Metropolitan Area (FCMA) was created. This map was developed by using information compiled from both public and commercial sources to prepare a series of map layers that identified lot size, assessor land use designations and types of crops produced.

Preparation of Map Layers

Data for this research was obtained from four primary sources:[11]

1) Parcel boundaries (1996)—Fresno County Planning Department

2) Parcel characteristics (1996)—MetroScan, Inc.

3) Crop data (1986 and 1994)—Department of Water Resources

4) Roads (1992)—U.S. Department of the Census, TIGER Line Files

Initial processing of the data occurred in the following steps:

a) A countywide parcel coverage was compiled from ARC/INFO[12] tile coverage provided by Fresno County.

b) A study area was selected to encompass the broader Fresno-Clovis Metropolitan Area including all rural-residential regions within and on the fringes of the FCMA that might compete with agricultural production. The study area was defined to extend from the foothills on the east to the fringe of the metropolitan area on the west, approximately 10 miles west of the Fresno city limits.

c) Assessment data for each 1.5- to 20-acre sized rural parcel in Fresno County were purchased from MetroScan, a commercial online real estate service. These were converted into MS-Excel and SAS databases. Each parcel was evaluated for its primary land use according to residential assessments, assessor's definition of land uses, ownership information and tax information. Based on this evaluation, a primary rural land use code was assigned.[13]

d) Department of Water Resources data were converted from an AutoCad format into ARC/INFO tiles. The tiles were then compiled for the study area.[14]

e) ARC/INFO road coverage and jurisdictional boundaries were prepared from TIGER line data.

Overlay of Map Layers

In order to evaluate crops produced on each parcel, it was necessary to combine the databases described above, attaching crop production information to each parcel. The crop database was subdivided into about 200,000 "fields"—small contiguous areas producing the same commodity. The parcel data was subdivided into about 19,000 1.5- to 20-acre sized rural lots. The fields covered the entire study area (Greater Fresno Metropolitan Area) with the rural lots scattered across it.

Data Analysis

Finally, a tabular accounting was prepared of crop production by parcel size. This accounting described agricultural production on an aggregate of all 1.5- to 20-acre rural lot sizes as well as breaking down the data into size groups. The data was then mapped to identify concentrations of rural lots over the entire study area and to illustrate patterns of rural residential land use in a small sample area.

Small Lot Fiscal Impact Analysis

An economic analysis was conducted to evaluate the overall pattern and economic impacts of existing rural lots to counties in the Central Valley.

The analysis relied on:

- Parcel data obtained from MetroScan, a commercial online real estate service providing parcel characteristics including size, assessed value, and use, analyzed with the assistance of American Farmland Trust.
- A detailed case study of the agricultural use of rural parcels in Fresno County using a Geographic Information System provided by GIS consultant Brian Muller.
- Interviews with staff in county assessors' offices, planning departments and/or with other county experts from 11 of the 18 study area counties (at least two per study area region).
- Agricultural Commissioner reports for crop mixes and 1996 commodity sales values in all counties of the valley.
- The 1995 Central Valley Input/ Output Model developed by Dr. George Goldman, University of California Cooperative Extension, for determining the indirect economic impact of agriculture retained and lost from rural parcels.
- Case study interviews and county budget information for estimating public revenues and costs.

For the purpose of this analysis, the 18 study area counties were grouped into four regions *(See "Study Area" map):*

Region A - Northern Sacramento Valley: Shasta, Tehama, Butte, Yuba, Colusa and Sutter counties (Note: Glenn County has not been included due to lack of availability of comparable data.)

Region B - Southern Sacramento Valley: Yolo, Sacramento and Solano counties plus the western portion of Placer County

Region C - Northern San Joaquin Valley: San Joaquin, Stanislaus and Merced counties

Region D - Southern San Joaquin Valley: Madera, Fresno, Tulare, Kings and Kern counties

The basic units of analysis are rural parcels of 1.5 to 20 acres in size located in unincorporated areas.

The basic units of analysis are rural parcels of 1.5 to 20 acres in size located in unincorporated areas. In this analysis, parcels are grouped by their developed or undeveloped status ("developed" is defined as having a dwelling unit on the property) and in size categories of 1.5 to 4.99 acres, five to 9.99 acres and 10 to 20 acres.

The fiscal impact analysis compared the revenues to counties generated by rural parcels against the cost of providing public sector services to rural residents. This comparison helped determine the fiscal impact of rural development on county government and local school districts.

The analysis looked at:

1. Property tax revenue to the counties in each region. These were based on counties receiving an average 20 percent share of the 1 percent tax on assessed value (affected by differences in parcel values);

2. County road maintenance and school bus costs. These cost estimates are based on the road frontage of rural parcels. Larger parcels, generally being more dispersed, are assumed to bear proportionately more road maintenance costs. Estimates were based on approximate shares of road frontage. Unfortunately, geographically specific data is not available to enable more accurate estimates based on travel distances. The calculation is based on typical parcels being square (although in reality they are a variety of shapes), with one side fronting a county road. Each parcel is assumed to share half of the road frontage. The road frontages for rural parcels throughout the study area average:

   a) 178 to 174 feet for 1.5- to 5-acre parcels;

   b) 270 to 268 feet for 5- to 10-acre parcels; and

   c) 407 to 389 feet for 10- to 20-acre parcels.

On average, developed parcels are just slightly larger than undeveloped parcels, although there are minor regional variations in these averages.

3. Annual costs of providing school bus transportation to the residentially developed rural parcels throughout the Central Valley based on interviews with facility managers from selected school districts. Estimates were based on 0.4 students per household with 75 percent of these students using bus service. The average cost for each student using school bus service is $485 annually, according to the State J141 reports (school district cost breakdown by district). Thus, the average cost per household for all developed rural parcels is estimated at $145.50.

Population-based costs were estimated by itemizing all the county budgets in the study area.

To allocate this average cost to the different sized parcels, the proportionate road frontage was used as the multiplier. This assumes that the larger parcels are more spread out, thus requiring longer bus rides to transport children to school, while somewhat more compact subdivisions of smaller lots will generally require less bus mileage. Road frontage is an approximate tool for estimating this cost differential. Extensive study county-by-county would be required to determine more precise bus costs based on actual location of parcels and their distance to schools. For purposes of this report, however, these estimates provide the relative costs borne by different sized developed parcels.

4. Other county revenues and costs are on a per capita or per parcel basis. Residents generate added revenues to the counties (e.g. vehicle in-lieu fees, cigarette and sales taxes, fines, business licenses, etc.). However, they also require a per capita share of other county services (e.g. sheriff, courts, recreation, libraries, administration, etc.). These service costs are assumed to be the same regardless of parcel size. However, more remote parcels will have longer response time for public safety services.[15]

Forty-one percent of the identified rural parcels are developed with a home.

These population-based costs are estimated by itemizing all the county budgets in the study area, eliminating case study or inapplicable items, and determining the items attributable to countywide and unincorporated area population. These totals are divided by the population served to determine per capita shares.

Fire protection and medical emergency response services are not factored into this analysis. Interviews with fire districts indicated that their revenue from property taxes covers the cost of service to rural parcels.

STUDY FINDINGS

How Prevalent are Ranchettes?

Researchers identified 189,368 rural parcels, totaling 1,270,048 acres, that meet the study's size and land use criteria within the 18-county study area. Utilizing the ranchette, at-risk and threatened designations, as described in the methodology section, it was determined that 147,276 of these rural parcels totaling 764,691 acres met the ranchette definition. In addition, 16,414 at-risk agricultural parcels totaling 97,529 acres, and 25,678 threatened agricultural parcels totaling 407,828 acres were identified. *(See Table 4.)*

The following statistics are noted to assist with understanding the size and land use of all rural parcels that were identified in this study. A detailed description of parcel sizes and types is available on a county-by-county basis under "Regional Breakdowns."

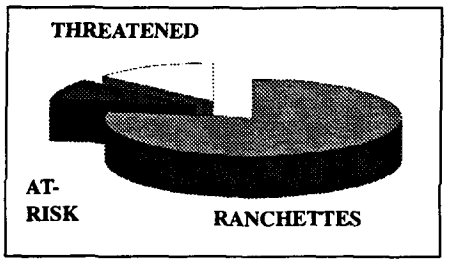
Ranchettes

- With an average parcel size of 5.19 acres, ranchettes make up 78 percent of all rural parcels that meet the study's size and land use criteria. At the same time, they account for only 60 percent of the total acreage.
- The ranchette category has the largest number of developed parcels within the study area. With 60,988 parcels totaling 320,119 acres, ranchettes account for 77 percent of all developed parcels.
- Forty percent of all identified rural parcels are listed as ranchettes and are in the two- to 4.99-acre size category.
- More than half (52 percent) of the rural parcels identified as ranchettes are in the two- to 4.99-acre size category.

At-Risk

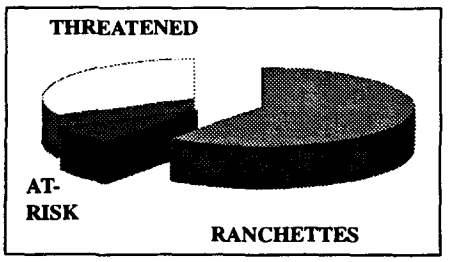
- At-risk agricultural parcels average about 5.94-acres in size and constitute 9 percent of all parcels identified in this study and 8 percent of the acreage.
- Considering only those parcels that were identified as agricultural by county assessors, 39 percent of these parcels and 19 percent of the acreage are in the "at-risk" agricultural category.
- Rural parcels in the at-risk agricultural category are responsible for 9 percent of the study's developed parcels and 7 percent of all identified acreage with a residence located on the property.

Table 4



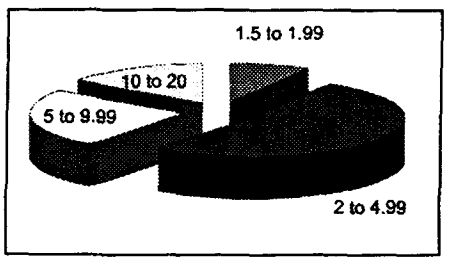
RURAL PARCELS

Ranchettes	147,276	78%
At-Risk	16,414	9%
Threatened	25,678	13%
Total	189,368	



PARCEL ACREAGE

Ranchettes	764,691	60%
At-Risk	97,529	8%
Threatened	407,828	32%
Total	1,270,048	



RANCHETTE PARCELS

1.5 to 1.99	12,768	9%
2 to 4.99	76,591	52%
5 to 9.99	35,346	24%
10 to 20	22,571	15%
Total	147,276	

Threatened

- Threatened agricultural parcels run, on the average, about 15.88 acres in size and while responsible for only 13 percent of all study parcels, this category represents 32 percent of the total acreage.

- The next largest group of "developed" parcels after ranchettes that were identified in this study is the threatened agriculture category—not the at-risk category that should include farmsteads. The small farm parcels that make up the threatened agriculture category account for 14 percent of all developed parcels within the study and 34 percent of the developed acreage.

Miscellaneous Facts

- For both developed and undeveloped parcels, the majority of the rural lots are in the 1.5- to five-acre range.

152,470 rural residents live on ranchettes.

- The 10- to 20-acre parcel size category holds the greatest number of acres. Fifty-five percent or 706,026 acres are in this category. Twenty-one percent (277,409 acres) of the total acreage is found in lots from 1.5- to 4.99-acres in size and 24 percent (309,280 acres) range from five- to 9.99-acres in size.

- There are almost as many ranchette properties in the 10- to 20-acre size category as there are threatened. Forty-six percent of the parcels and 41 percent of the acreage in this size category are considered as residential by county assessors.

How Many Rural Residents are There?

Of the study's more than 189,000 identified rural parcels, 41 percent are currently developed with a home. This percentage of developed rural parcels holds true for ranchette parcels also. On the 147,276 identified ranchette parcels, 60,988 are developed with a residence. In the at-risk and threatened agricultural categories, 39 and 44 percent of the parcels, respectively, have a residence on them. In all, the study identified 78,787 parcels that have been developed with a residential structure. *(See Table 5 for parcel size breakdowns.)*

Table 5

DEVELOPED PARCELS

Ranchette Parcels		
Parcel Size	**Parcels**	**Acres**
1.5 to 1.99 Acres	6,307	10,900
2 to 4.99 Acres	30,456	96,015
5 to 9.99 Acres	16,582	106,810
10 to 20.00 Acres	7,643	106,364
Subtotal	60,988	320,089
Agricultural Parcels		
Parcel Size	**Parcels**	**Acres**
1.5 to 1.99 Acres	260	444
2 to 4.99 Acres	2,116	7,442
5 to 9.99 Acres	4,091	32,045
10 to 20.00 Acres	11,332	183,312
Subtotal	17,799	223,243
Totals	**78,787**	**543,361**

Using the formula of 2.5 people per developed parcel, a rural population of 196,968 residents can be estimated as living on these properties—or about 9 percent of the total

population living in the unincorporated regions throughout the 18-county study area.[16] An estimated population of 152,470 residents on the developed ranchette parcels can be arrived at by using this formula.

The top five counties with developed rural parcels are: Fresno, Tulare, Shasta, San Joaquin and western Placer counties. As noted in Table 6, this pattern is not replicated when accounting for the number of acres that make up these developed properties. In that case, Tehama County nudged out western Placer County due to its greater number of developed parcels in the "threatened" agricultural category. The majority of developed rural parcels in western Placer County were predominantly less than five acres in size, thus reducing the number of acres involved. It should be noted that only the western half of Placer County is included in this study. A line was drawn just to the east of the city of Auburn, leaving almost half of the county unaccounted for, including vacation properties in the forests and around Lake Tahoe.

Table 6

TOP 5 COUNTIES

DEVELOPED PARCELS

1. FRESNO	15,589	20%
2. TULARE	7,457	9%
3. SHASTA	7,045	9%
4. SAN JOAQUIN	6,383	8%
5. PLACER	5,637	7%
REMAINING COUNTIES	39,758	47%

DEVELOPED ACRES

1. FRESNO	110,466	20%
2. TULARE	60,250	11%
3. SAN JOAQUIN	47,316	9%
4. SHASTA	43,494	8%
5. TEHAMA	34,587	6%
REMAINING COUNTIES	262,298	46%

The average developed rural parcel sizes for the top five counties is:

1	Fresno	7 acres
2	Tulare	8 acres
3	Shasta	6 acres
4	San Joaquin	7.4 acres
5	Placer	5.24 acres

The percentages in Table 6 are based on the study's 78,787 developed parcels only. For detailed county information and parcel size/land use numbers, see "Regional Breakdowns."

After excluding developed rural parcels defined as "at-risk" or "threatened" agricultural properties, ranchettes account for 77 percent of the study's developed rural parcels and 59 percent of the acreage.

The top five counties with developed ranchettes are:

1	Fresno	12,915 parcels
2	Shasta	5,665 parcels
3	Placer	5,637 parcels
4	Madera	4,757 parcels
5	San Joaquin	4,577 parcels

Table 7

RANKING OF COUNTIES DEVELOPED RANCHETTES				
	Counties	**# of Parcels**	**# of Acres**	**Average Parcel Size**
1	Fresno	12,915	69,894	5.41
2	Shasta	5,665	30,850	5.45
3	Placer	5,637	29,443	5.22
4	Madera	4,757	22,416	4.71
5	San Joaquin	4,577	22,190	4.85
6	Tulare	4,548	21,154	4.65
7	Tehama	4,404	27,048	6.14
8	Butte	4,354	24,449	5.62
9	Colusa	3,263	21,602	6.62
10	Solano	2,658	13,671	5.14
11	Sacramento	2,314	10,540	4.55
12	Kings	1,520	7,899	5.20
13	Merced	1,423	4,687	3.29
14	Stanislaus	992	5,084	5.12
15	Kern	944	4,096	4.34
16	Yolo	405	2,586	6.69
17	Yuba	355	1,763	4.97
18	Sutter	257	748	2.91
TOTALS		**60,988**	**320,120**	**5.25**

Table 7 ranks the 18 study counties in order of number of developed ranchette parcels. Fresno County's nearly 13,000 parcels represent more than twice that of its nearest competitor, Shasta County. Although parcel data in Placer County was gathered only on the western half of the county, it keeps ranking in the top five counties.

While the greater number of developed ranchette parcels falls in the two- to 4.99-acres size category, the average size of these rural properties is just over five acres.

A review of the developed parcel data shows that residences are being built in all of the size and land use categories regardless of what the county assessor lists as the primary land use.

While the developed ranchette parcels are close to five acres in size, the largest number of developed agricultural properties are in the larger-than-10 acres category.

Undeveloped Rural Parcels

Researchers identified 110,581 rural parcels, totaling 726,687 acres that are not currently developed with a residence. Vacant ranchette parcels account for 78 percent of this total.

With 78,787 of the study's identified rural parcels developed, this leaves 110,581 that can still be used to house new residents without any additional lot splits, rezones or general plan amendments. *(See Table 8 for parcel size*

breakdowns.) Based once again on the 2.5 residents per dwelling unit formula, this means that there is the potential for an additional 278,685 rural residents living on the study's identified rural parcels. It should be noted that this number is based on a scenario that uses all of the undeveloped parcels, not just those in the ranchette category.

Table 8

UNDEVELOPED PARCELS

Ranchette Parcels		
Parcel Size	**Parcels**	**Acres**
1.5 to 1.99 Acres	6,461	11,338
2 to 4.99 Acres	46,135	133,019
5 to 9.99 Acres	18,764	117,919
10 to 20.00 Acres	14,928	182,295
Subtotal	86,288	444,571
Agricultural Parcels		
Parcel Size	**Parcels**	**Acres**
1.5 to 1.99 Acres	502	863
2 to 4.99 Acres	3,464	11,925
5 to 9.99 Acres	5,981	44,810
10 to 20.00 Acres	14,346	224,516
Subtotal	24,293	282,114
Totals	**110,581**	**726,687**

The potential number of new rural dwellers drops to 215,720 if assumptions are based solely on the ranchette land use category. By including the 9,947 undeveloped "at-risk" ag parcels—those agricultural parcels that are smaller than 10 acres in size—the number increases to 96,235 new residences and 240,588 new rural residents.

Nearly 60 percent of the study's undeveloped parcels are located in Region D, Southern San Joaquin Valley. *(See Table 9.)* The majority, 65 percent, of these undeveloped rural parcels can be found in Kern County. The top five counties with undeveloped rural parcels are: Kern, Sacramento, Fresno, Tulare and Tehama counties. The average sizes of these counties' undeveloped rural parcels are:

1	Kern	4.5 acres
2	Sacramento	4.8 acres
3	Fresno	8.6 acres
4	Tulare	10 acres
5	Tehama	7.6 acres

Table 9

TOP 5 COUNTIES

UNDEVELOPED CVRS PARCELS

1. KERN	45,094	40%
2. SACRAMENTO	11,779	11%
3. FRESNO	10,193	9%
4. TULARE	7,053	6%
5. TEHAMA	5,547	5%
REMAINING COUNTIES	31,808	29%

UNDEVELOPED CVRS ACRES

1. KERN	201,141	27%
2. FRESNO	87,687	12%
3. TULARE	70,321	10%
4. SACRAMENTO	57,502	8%
5. TEHAMA	42,268	6%
REMAINING COUNTIES	275,385	37%

There is an obvious disparity in average parcel sizes between the top two—Kern and Sacramento—and the other three counties. Of the identified undeveloped rural parcels in Kern County, 66 percent (30,113) are smaller than five acres in size. Another 17 percent of the county's undeveloped rural parcels (7,466) are listed in the five- to 9.99-acres in size category. Sixty-seven percent of the identified undeveloped rural parcels in Sacramento County (7,953) are smaller than five acres in size. Twenty percent of the county's undeveloped rural parcels (2,339) are listed in the five- to 9.99-acres in size category. In all, 83 percent of Kern's and 87 percent of Sacramento's identified undeveloped rural parcels are smaller than 10 acres in size.

Fresno County also has a healthy supply of undeveloped parcels. Forty percent of the county's parcels that meet the study's size and land use criteria are undeveloped (10,193 parcels totaling 87,687 acres).

There are 86,288 undeveloped ranchette parcels within the study area. While these numbers may sound high, ranchettes account for only a small portion of any county's annual residential development. Ranchette parcels continue to attract small custom homebuilders, but rural housing, when considered in perspective to the Central Valley's overall housing market, is very small. At current rates it could take a long time to develop all the available rural parcels. For instance, Sacramento County—where they have been tracking ranchette development since 1974—experiences an average of 100 rural housing starts per year.

What is Growing on Ranchettes?

As part of this study, GIS consultant Brian Muller conducted a case study in the greater Fresno-Clovis Metropolitan Area to determine just how many of the area's small rural parcels still support agriculture. *(See Table 10.)* The methodology use in this case study can be found on page 13, "Small Lot Agricultural Identification."

Table 10

Fresno/Clovis Metropolitan Area
Small Rural Lot / Ag Results

Parcel Size	Use Code	Acreage		
		Total Acreage	DWR Ag Acreage	% of Acreage in Ag Use
<5	R	11,513.70	2,681.10	23
<10	R	5,490.75	2,330.33	42
10+	R	12,571.75	9,128.15	73
<5	RV	1,860.51	455.89	25
<10	RV	1,455.99	566.09	39
10+	RV	3,575.90	2,903.16	81
<5	A	349.87	215.98	62
<10	A	1,479.85	1,089.79	74
10+	A	11,759.74	9,877.47	84
<5	AR	184.21	128.69	70
<10	AR	2,004.01	1,544.66	77
10+	AR	21,466.75	18,481.11	86
TOTAL		**73,713.03**	**49,402.42**	**67%**

R = Ranchette, RV = Ranchette (vacant), A = Ag (w/o homesite), AR = Ag (w/homesite)

The case study area (central Fresno County) contains almost 19,000 small rural parcels on 73,475 acres that were identified as part of the Central Valley Ranchette Study.[17] The case study's findings showed that:

- Seventy-two percent of the case study acreage was located on parcels developed with a rural residence.
- Twenty percent of the case study acreage (14,992 acres) is used exclusively for urban uses, while 6,023 acres are used exclusively for residential purposes.
- Forty-nine percent of the case study acreage (36,337 acres) is located on ranchette parcels.
- A substantial amount of agricultural production occurs on small rural parcels, but primarily on those parcels over 10 acres.
- Almost 50,000 acres of four primary crops are farmed on small parcels within the broader Fresno/Clovis Metropolitan Area—31,522 acres of vineyards, 10,810 acres of deciduous trees, 4,548 acres of citrus, and 2,107 acres of truck produce. About 3,000 acres of these four crops are located on parcels smaller than five acres. About 2,500 acres of these crops are located on parcels between five and 10 acres in size.
- Forty-eight percent of the acreage on developed ranchette parcels (14,022 out of 29,458 acres) is utilized by production agriculture.
- Fifty-seven percent of the acreage on vacant ranchette parcels (3,912 out of 6,879 acres) is utilized by production agriculture.
- Eighty-five percent of the acreage on agricultural parcels developed with a house (20,064 out of 23,564 acres) is utilized by production agriculture.
- Eighty-two percent of the acreage on undeveloped agricultural parcels (11,167 out of 13,573 acres) is utilized by production agriculture.

The findings of Muller's case study show that on parcels, both developed as well as undeveloped, listed as agricultural in Fresno County, a high percentage (84 percent) of the acreage is utilized for production agricultural purposes. The findings also show that nearly half (49.5 percent) of the acreage on parcels designated as ranchettes is in agricultural production. However, this percentage of agricultural production acreage is halved to only 23 percent on ranchette parcels smaller than five acres in size.

Economic Analysis of Central Valley Rural Parcels

The analysis of the fiscal impact on counties from small rural lots was conducted by the Oakland, California-based economic consulting firm of Strong Associates. At the request of American Farmland Trust, Strong Associates evaluated the overall pattern and economic impacts of existing rural

lots in the Central Valley of California. This analysis compares county revenues generated by the study's identified rural parcels and assigns costs on a per-parcel basis for providing public sector services to these same properties.

County Rural Revenues

Analysis showed that the 189,368 identified rural parcels, totaling 1,270,048 acres, generate an estimated $26.1 million in annual county property tax revenues. This figure is based on the reported tax share of counties receiving an average 20 percent share of the 1 percent tax on assessed value.

The cost to provide public sector services to a parcel increases from $23 to $354 once it has been developed.

When comparing developed vs. undeveloped rural parcels, it was found that developed rural parcels generate 77 percent of the total revenue or an estimated $20.1 million. Undeveloped parcels are responsible for the remaining 23 percent. On the average, developed rural parcels generated $275 per parcel in annual county property tax revenue, while undeveloped rural parcels generated $55 per parcel.

Listed below are the regional variations:

- Northern Sacramento Valley generates a below-average property tax revenue of $223 per developed parcel, but a somewhat above average revenue of $64 per undeveloped parcel.
- Southern Sacramento Valley was well above the study area average, with the typical developed parcel generating $350 in annual county property tax revenue, and the typical undeveloped parcel generating $102.
- Northern San Joaquin Valley was near the study average for annual county property tax revenue generated by developed parcels, at $283 per parcel, and significantly higher than average with $99 for undeveloped parcels.
- Southern San Joaquin Valley was below the study average with $234 annual county property tax revenue generated by developed parcels and $36 by undeveloped parcels.

County Rural Costs

Part of Strong Associates' fiscal assessment of rural residential development is to estimate what it costs counties to provide public sector services to rural residents, and to assign these costs to individual parcels based on existing improvements (dwelling unit) and size. Strong estimated that overall, counties within the study area spend $20.6 million annually to provide services to rural residents. In addition, the school districts located within the study area spend approximately $10.4 million each year, primarily for busing, on students from rural areas. *(See Table 11.)*

Revenue Shortfalls

The analysis indicates that when a dwelling unit is built on a typical undeveloped rural parcel there is a huge increase in the public sector shortfall. It was found that on the average, the cost to provide public sector services to

Table 11

Rural Parcel Revenue and Costs					
	Revenue Property Tax	Road Cost	Pop/Admin Cost	Net Revenue Shortfall	School Bus Cost
Developed					
1.5 to 4.99 acres	$278	($101)	($337)	($160)	($91)
5 to 9.99 acres	$280	($154)	($337)	($211)	($138)
10 to 20 acres	$265	($231)	($337)	($303)	($208)
Total Developed	$275	($146)	($337)	($208)	($146)
Undeveloped					
1.5 to 4.99 acres	$37	($20)	($50)	($32)	NA
5 to 9.99 acres	$66	($30)	($50)	($14)	NA
10 to 20 acres	$80	($44)	($50)	($14)	NA
Total Undeveloped	$55	($29)	($50)	($23)	
Total Rev/Costs					
Developed	$20,138,000	($11,542,000)	($26,529,000)	($17,933,000)	($10,367,000)
Undeveloped	$5,987,000	($3,164,000)	($5,529,000)	($2,705,000)	NA
Combined Total	**$26,126,000**	**($14,705,000)**	**($5,555,000)**	**($20,638,000)**	**($10,367,000)**

( ) indicates deficit

an undeveloped parcel increases $331, from $23 to $354 ($208 county; $146 school district), once it has been developed.

- When a typical 1.5- to five-acre parcel is developed, the total net public sector service costs rise from $32 to $251 ($160 county; $91 school district) per parcel.

- When a five- to 10-acre parcel is developed, the average annual shortfall rises from $14 to $349 ($211 county; $138 school district) per parcel.

- The greatest adverse fiscal impact is when a 10- to 20-acre parcel is developed, with net cost increasing from $14 to $511 ($303 county; $208 school district) per parcel.

The greatest adverse fiscal impact is when someone develops a 10- to 20-acre parcel, with the net costs for services increasing from $14 to $511.

Put simply, counties will suffer a substantial increase in revenue shortfalls as undeveloped rural parcels are built out with residences, with the fiscal drain even higher on medium- and larger-sized parcels.

Ranchette Impacts on Agriculture

As agricultural land is subdivided into small rural parcels, its agricultural use is often abandoned or compromised. When these small rural parcels are also developed with a residential dwelling unit, the probability of their maintaining some form of productive agriculture is drastically reduced. *(See Table 12.)*

Utilizing "Ag-Use" percentages created by Brian Muller *(See* What is Growing on Ranchettes? *on page 22)* and subjective judgments derived from a local interview process, Strong Associates estimates the following:

- 456,000 acres (45 percent of farmable acres) within the study area have been lost from potential farming use due to parcelization.

- On parcels with a developed homesite, 53 percent of the farmable acreage has been lost from farming. On developed parcels that are less than five

Table 12

IMPACTS TO PRODUCTION AGRICULTURE			
	Farmable Acres	Ag Acres Lost	Percent Lost
Developed			
1.5 to 5 acres	91,390	77,373	85 percent
5 to 10 acres	109,491	65,078	59 percent
10 to 20 acres	232,751	88,942	38 percent
Total Developed	433,632	231,392	53 percent
Percent of Comb Total		51 percent	
Undeveloped			
1.5 to 5 acres	125,621	80,019	64 percent
5 to 10 acres	128,517	53,543	42 percent
10 to 20 acres	323,414	91,327	28 percent
Total Undeveloped	577,552	224,888	39 percent
Percent of Combined Total		49 percent	
Combined Total	1,011,184	456,281	45 percent
Economic Impacts			
		Annual Loss	Jobs
Direct Ag Sales Lost		$801,893,000	
Direct + Indirect Sales Lost		2,017,275,000	35,203

acres in size, the loss increases to 85 percent. On developed parcels that are between 10 to 20 acres in size, this loss of agricultural use drops to 38 percent.

- An estimated loss of $802 million of gross agricultural sales value (based on crop types and values by region) occurred due to non-farming uses and the inefficiencies inherent in farming small parcels.

- This loss in agricultural production represents 5.1 percent of the 1996 total of $16 billion valley-wide direct sales value of agriculture.

As direct farm value is lost, indirect losses of economic activity, income and jobs also occur. These total private sector impacts are estimated at:

- $2.017 billion in total direct and indirect sales is lost annually due to the reduced agricultural production. Of that, $729 million is in loss of annual personal income.

- Finally, 35,200 direct and indirect permanent jobs are estimated to have been lost due to the impact of small lot rural parcelization on study area farmlands.

Continued parcelization, residential development, and increases in property values jeopardize production and tend to drive farming operations out.

It is important to note that these amounts do not include *future* losses of agricultural production to existing and continued rural parcelization. Almost 550,000 acres of the study's identified rural parcels are estimated as remaining in agricultural production. Continued parcelization, residential development, and increases in property values jeopardize production and tend to drive farming operations out.

CONCLUSIONS AND RECOMMENDATIONS

Three things became apparent from this study. First, there are a lot of small rural parcels currently existing in the Central Valley. Second, ranchettes are an inefficient and wasteful means of housing the valley's projected future population. And finally, on the average, these small rural parcels become financial detriments to the counties in which they are located when they are developed with a single-family residence.

Based on these three points, AFT makes the following recommendations:

- With over 444,000 acres of undeveloped ranchettes currently available, there is no need for the creation of any additional ranchette parcels.

- In those cases where development on ranchette parcels does occur, it should not diminish the level of services provided to existing rural residents by counties or school districts, nor impact a region's environmental quality, without providing full mitigation.

REGIONAL BREAKDOWNS

Region A—Northern Sacramento Valley

Shasta, Tehama, Butte, Glenn, Colusa, Yuba and Sutter Counties

This northernmost five-county area is the most rural and least populated of the study's four regions. It supports less crop diversity and lower agricultural intensity than other regions. Rice and tree crops dominate production in this region. Rice, the highest value crop in the region, is only produced on large parcels. Orchard lots are much more variable in size.

In general, counties in this region contain a scattering of undersized subdivisions, created long ago, some of which are currently farmed as part of larger economic units. Many parcels are located near urban areas, where there had been orchard production. Most are located in oak woodlands and grazing areas.

This region has the lowest total percentage of agriculture production on rural parcels because many subdivisions are located in areas not suitable for agriculture. Vacant parcels are mainly leased for grazing. In some counties these parcels are becoming more valuable as building sites and are awaiting development. According to one source, "the territory is carved up but not yet built out." While agriculture is no longer the region's predominant industry, it is still the dominating "lifestyle."

According to the Department of Finance's population estimates, Region A counties have a combined population of 570,100 people. Of this number, 271,925 are listed as living in unincorporated areas. The Department of Conservation's 1994 Farmland Mapping and Monitoring Program report shows 109,061 acres of urban and built-up land within Region A.

In Region A, researchers identified 42,611 rural parcels totaling 306,311 acres that met the study's criteria. Three-fourths of the total of these small rural parcels are located in Shasta (28 percent), Tehama (25 percent) and Butte (19 percent) counties. Of the more than 42,000 identified parcels, it was determined that 23,000 parcels totaling 150,068 acres currently had some form of residential development on them. Of these, 4,702 parcels totaling 43,608 acres—housing approximately 11,755 residents—were listed by county assessors as agricultural properties.

Using the population-to-dwelling-unit ratio of 2.5 residents per house, this should mean that there are approximately 57,500 residents living on rural parcels that range in size between 1.5 and 20 acres. These figures average out to density levels of 2.6 acres per resident, or 6.5 acres per dwelling unit. The remaining undeveloped parcels total 156,243 acres. Seventy-five percent of this population is located in Shasta, Tehama, and Butte Counties. These residents represent an average of almost 19 percent of the region's unincorporated area population. In Tehama and Shasta, these residents are an even higher share of unincorporated population, at almost 35 percent and 26 percent, respectively.

Using assessor land use designator codes it was determined that Region A (not counting Glenn County) has 32,287 ranchettes totaling 200,728 acres. The region also has 10,324 at-risk agricultural parcels totaling 105,585 acres. Forty-five percent of these at-risk agricultural parcels have been developed with a single-family residence, while 56 percent of the ranchette parcels have been developed.

By parcel size, use of parcels can be generally described as follows:

- For rural parcels 1.5 to 4.99 acres in size, it is estimated that only 10 percent of the acreage located on developed parcels and 35 percent of the acreage of undeveloped parcels currently support agricultural production. However, a number of small parcels are now leased for intensive strawberry production, both in proximity to urban areas and in outlying areas.

- An estimated 30 percent of the acreage in the five- to 9.99-acre range on developed parcels is in agricultural production, often a remnant orchard that is managed by someone other than the landowner. Farm use is retained on an estimated 40 percent of the undeveloped parcels in this size range, often leased for grazing.

- In those counties where agricultural zoning allows 20-acre minimum parcels on farmlands, these parcels are likely to be in agricultural use, although some will include a one- to two-acre homesite. There is no information on how much of these agriculture-zoned lands have been divided into minimum parcels. This is likely to be variable per county.

- In Tehama County, few 20-acre parcels have agricultural production. Other counties in the region are estimated to have more (40 percent for developed parcels and 60 percent for undeveloped parcels).

In some ways, Tehama County typifies what is happening on Region A's rural lands. This county, with a 1996 population of almost 55,000[18] has over the years seen a phenomenal amount of small-lot creation. According to a 1995 study by Susan Crawford and David Key, *Tehama County Land Use Patterns,* over 12,000 acres of farmland have been converted since 1991 for residential and commercial use. At the time of that report, an additional 7,500 acres of farmland were in the process of coming out of the Williamson Act, thereby positioning themselves for potential development, if there was any.

Our studies show that 51 percent, or more than 27,000 acres of Tehama County's ranchette parcels, are undeveloped. However, the situation according to Crawford and Key may be even worse. Their study looked at all the parcels in the county, regardless of size. It showed 16,044 ranchette parcels—almost double the 7,491 parcels that met this study's criteria—with 45 percent of these undeveloped. One of the main reasons for this large disparity in numbers is the exceptionally large number of subdivisions that created hundreds of small (less than 1.5 acres in size) ranchette lots.

Fiscal Impacts

Property Tax Revenue: Rural parcels account for $6.38 million in annual property tax revenue to Region A counties. Within this region:

- $5.12 million (80 percent) of this estimated property tax is from developed parcels, and
- $1.26 million (20 percent) is from undeveloped parcels.

Road Costs: Rural parcels have approximately $3.95 million in rural road costs attributed to them annually.

- $3.32 million is for the cost share borne by developed parcels, while
- $0.63 million is for the share allocated to undeveloped lots.

Resident-Related and Administrative Costs: For Region A, the resident-related annual net cost of rural parcels is estimated at:

- $4.49 million, or an average of $195 per developed parcel.
- In addition to resident-related costs allocated to developed parcels, it is estimated that undeveloped rural parcels require county administrative services averaging $50 per parcel.
- The combined total resident-related and administrative costs for the region are estimated at $5.47 million net annual cost. Every county shows a net cost, with the major shares in Shasta (a $2.46 million annual shortfall) and Tehama (a $1.17 million annual shortfall).

School Transportation Costs: Region A's developed rural parcels account for an estimated $3.09 million in annual school bus service costs.

Regional Shortfall: Region A has a total net cost (annual shortfall) of $6.13 million. This figure is arrived at by contrasting property tax revenue with costs for roads, resident-related and per parcel administrative items, and school district expenditures for busing rural students.

REGION A

SHASTA COUNTY *(RESULTS ADJUSTED BASED ON PARCEL DATA SUPPLIED BY COUNTY)*

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	18	31.27	$102,878	$16,344
At-Risk Ag	<05	U	202	716.23	$2,686,579	$460,358
At-Risk Ag	<10	U	319	2,296.94	$6,523,310	$1,428,482
Threatened Ag	10+	U	720	10,859.37	$21,773,037	$4,208,400
At-Risk Ag	<02	D	29	48.60	$980,408	$3,469,328
At-Risk Ag	<05	D	318	1,126.73	$12,000,801	$34,890,324
At-Risk Ag	<10	D	444	3,115.50	$18,300,447	$36,773,856
Threatened Ag	10+	D	589	8,352.45	$27,203,930	$45,628,063
Ranchette	<02	U	243	415.40	$4,508,752	$657,801
Ranchette	<05	U	1,630	5,252.39	$38,615,571	$3,258,370
Ranchette	<10	U	1,361	8,640.88	$40,612,136	$14,014,217
Ranchette	10+	U	995	13,272.56	$33,115,037	$1,047,735
Ranchette	<02	D	386	659.00	$10,010,869	$28,119,714
Ranchette	<05	D	2,575	8,262.71	$80,577,948	$204,509,075
Ranchette	<10	D	1,891	11,720.21	$64,355,673	$157,943,884
Ranchette	10+	D	813	10,208.55	$33,718,841	$62,360,352
TOTALS			**12,533**	**84,979**	**$395,086,216**	**$598,786,303**

TEHAMA COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	24	41.89	$22,956	$4,476
At-Risk Ag	<05	U	159	532.18	$713,255	$451,396
At-Risk Ag	<10	U	408	3,031.88	$5,078,714	$3,252,880
Threatened Ag	10+	U	807	11,437.00	$13,122,228	$7,817,077
At-Risk Ag	<02	D	4	6.93	$57,212	$213,528
At-Risk Ag	<05	D	17	67.09	$228,889	$1,709,453
At-Risk Ag	<10	D	103	823.70	$2,097,802	$7,081,756
Threatened Ag	10+	D	435	6,641.06	$12,256,181	$27,438,899
Ranchette	<02	U	632	1,089.19	$6,409,619	$241,205
Ranchette	<05	U	1,363	4,250.78	$18,717,544	$631,928
Ranchette	<10	U	1,094	7,709.64	$21,460,871	$415,601
Ranchette	10+	U	1,060	14,175.66	$22,678,828	$400,372
Ranchette	<02	D	483	831.54	$9,378,229	$28,270,619
Ranchette	<05	D	1,653	5,019.97	$35,858,194	$95,115,453
Ranchette	<10	D	1,262	8,737.89	$33,406,273	$72,940,860
Ranchette	10+	D	1,006	12,458.77	$30,630,392	$55,156,049
TOTALS			**10,510**	**76,855**	**$212,117,187**	**$301,141,552**

U = Undeveloped D = Developed

BUTTE COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	11	19.01	$104,965	$13,212
At-Risk Ag	<05	U	126	468.09	$2,117,252	$611,088
At-Risk Ag	<10	U	289	2,244.65	$8,999,810	$1,325,838
Threatened Ag	10+	U	419	6,297.47	$16,323,192	$2,248,297
At-Risk Ag	<02	D	7	12.50	$176,586	$547,426
At-Risk Ag	<05	D	51	197.20	$1,682,303	$4,469,413
At-Risk Ag	<10	D	180	1,347.48	$7,962,798	$14,961,311
Threatened Ag	10+	D	268	4,066.54	$15,713,924	$19,839,793
Ranchette	<02	U	210	362.44	$10,514,458	$2,157,025
Ranchette	<05	U	817	2,714.58	$39,130,651	$3,689,263
Ranchette	<10	U	1,217	7,437.12	$57,614,876	$36,372,419
Ranchette	10+	U	720	9,290.16	$37,013,657	$1,586,257
Ranchette	<02	D	563	964.37	$20,337,186	$47,073,912
Ranchette	<05	D	1,547	5,011.29	$58,632,786	$132,674,670
Ranchette	<10	D	1,588	9,985.09	$64,929,533	$129,032,913
Ranchette	10+	D	656	8,488.14	$32,379,860	$51,685,529
TOTALS			**8,669**	**58,906**	**$73,633,837**	**$448,288,366**

GLENN COUNTY *(NO PARCEL DATA AVAILABLE FOR THIS COUNTY)*

COLUSA COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	49	82.04	$232,096	$65,486
At-Risk Ag	<05	U	179	608.88	$2,101,249	$207,582
At-Risk Ag	<10	U	202	1,483.58	$3,363,109	$216,746
Threatened Ag	10+	U	565	8,386.37	$12,818,683	$1,195,440
At-Risk Ag	<02	D	7	11.70	$114,551	$861,409
At-Risk Ag	<05	D	49	168.58	$910,259	$4,563,264
At-Risk Ag	<10	D	51	390.20	$1,648,051	$4,867,280
Threatened Ag	10+	D	170	2,346.82	$6,359,366	$17,008,679
Ranchette	<02	U	32	55.97	$328,839	$13,294
Ranchette	<05	U	111	333.40	$1,761,827	$36,762
Ranchette	<10	U	45	298.94	$706,869	$20,893
Ranchette	10+	U	72	805.04	$1,836,923	$16,854
Ranchette	<02	D	66	112.14	$1,038,678	$4,440,307
Ranchette	<05	D	152	440.03	$3,479,469	$13,643,946
Ranchette	<10	D	72	499.25	$1,916,664	$3,884,390
Ranchette	10+	D	65	711.35	$3,114,883	$5,632,518
TOTALS			**1,887**	**16,734**	**$41,731,516**	**$56,674,850**

U = Undeveloped D = Developed

YUBA COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	9	15.11	$161,318	$0
At-Risk Ag	<05	U	102	310.62	$2,025,729	$10,039
At-Risk Ag	<10	U	159	919.80	$3,552,468	$19,400
Threatened Ag	10+	U	121	1,549.66	$3,670,372	$35,166
At-Risk Ag	<02	D	15	24.64	$1,007,290	$5,004,261
At-Risk Ag	<05	D	57	190.62	$3,170,131	$23,693,296
At-Risk Ag	<10	D	42	269.90	$5,720,840	$15,117,143
Threatened Ag	10+	D	22	302.56	$2,101,815	$5,288,180
Ranchette	<02	U	49	83.56	$834,355	$37,455
Ranchette	<05	U	588	2,188.70	$12,043,402	$298,193
Ranchette	<10	U	1,050	6,607.27	$25,881,126	$358,580
Ranchette	10+	U	646	9,065.15	$20,895,873	$247,981
Ranchette	<02	D	180	303.94	$3,605,419	$11,312,819
Ranchette	<05	D	992	3,253.69	$24,876,455	$71,173,709
Ranchette	<10	D	1,384	8,499.61	$47,146,698	$116,919,100
Ranchette	10+	D	707	9,544.28	$32,313,695	$66,162,350
TOTALS			**6,123**	**43,129**	**$189,006,986**	**$315,677,672**

SUTTER COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	7	12.27	$39,015	$7,655
At-Risk Ag	<05	U	56	187.07	$773,059	$128,166
At-Risk Ag	<10	U	102	755.91	$2,960,880	$380,186
Threatened Ag	10+	U	569	9,688.59	$28,968,616	$3,203,422
At-Risk Ag	<02	D	96	164.65	$2,373,291	$6,897,722
At-Risk Ag	<05	D	602	1,965.59	$16,801,054	$38,347,802
At-Risk Ag	<10	D	561	4,145.14	$21,687,589	$30,623,282
Threatened Ag	10+	D	585	7,821.78	$31,478,624	$40,341,486
Ranchette	<02	U	16	27.41	$235,735	$3,746
Ranchette	<05	U	27	72.72	$1,084,268	$7,101
Ranchette	<10	U	5	33.76	$581,300	$0
Ranchette	10+	U	6	85.02	$1,439,660	$2,951
Ranchette	<02	D	99	168.02	$2,434,878	$7,529,944
Ranchette	<05	D	129	335.05	$4,906,626	$11,844,398
Ranchette	<10	D	20	126.71	$854,053	$1,923,136
Ranchette	10+	D	9	118.12	$509,911	$1,022,644
TOTALS			**2,889**	**25,708**	**$117,128,559**	**$142,263,641**

REGION A TOTALS	**42,611**	**306,311**	**$1,328,704,301**	**$1,862,832,384**

U = Undeveloped D = Developed

Region B—Southern Sacramento Valley

Yolo, Sacramento, Solano and Western Placer Counties

This region has both a higher population and more intensive agriculture than found in the counties to the north. Across the region, top dollar producing crops are tomatoes and grapes, followed by row-crops including alfalfa, corn and hay.

It is difficult to generalize the use of small rural parcels across the counties in this region. Each has distinct characteristics and policies regarding rural subdivisions.

In western Placer County, 75 percent of the rural parcels are developed. There is also substantial continuing subdivision activity in this county. Most developed parcels under 10 acres in size are used primarily for residential purposes, although some may have small viable orchards or are grazed. Undeveloped parcels tend to be fallow, awaiting development, or leased out for grazing. There is, however, a growing trend to put intensive, high-value flower production on small undeveloped parcels. Larger 10- to 20-acre parcels in Placer County's agricultural areas are more likely to be farmed as part of a larger unit. Where these parcels are developed, a portion of farm use (about one to two acres of each lot) will be taken up for a homesite.

In contrast, Yolo County has a total of only 1,170 rural parcels, totaling 10,400 acres. Most agricultural land in Yolo County is in larger units with only a handful of agricultural parcels under 20 acres that are intensively cultivated. County policy disallows splits and there are only two areas in the county that are set aside for rural residential development.

In Sacramento County it almost seems a foregone conclusion that the "Ag-Res" land use (ranchettes) is the "greatest and best use" for small agricultural parcels of 20 acres or less in the south county area. For several years now discussion has been underway on how and when these ag properties can be converted to residential uses. In the south county area ranchettes have almost formed a continuous ring along the edge of Sacramento's Urban Services Boundary. In the north, older ranchette communities like Orangevale have been completely surrounded by denser urban development as the suburbs have moved further outward from Sacramento's downtown.

Using assessor land use designator codes it was determined that Region B has 27,216 identified rural parcels totaling 150,875 acres. Most of these parcels (53 percent) are located in Sacramento County, followed by western Placer County (28 percent) and Solano County (15 percent). Yolo County is a distant fourth at 4 percent.

Eighty-seven percent of the study's identified rural parcels in Region B, and 75 percent of the acreage, is listed by local assessors as ranchettes (23,685 parcels, or 112,518 acres). Almost half of these (11,014 parcels, or 56,240 acres) are developed. Only 17 percent (241 parcels, or 1,482 acres) of the at-risk agricultural parcels, and 24 percent of the region's threatened agricultural

parcels (492 parcels, or 7,551 acres) have homesites on them. On a region-wide basis, 43 percent of the rural parcels identified by this study are developed.

Regionally, the average parcel size is 5.6 acres for a developed parcel and 5.5 acres for an undeveloped lot.

The estimated population of the developed rural parcels totals 29,400 for the region, with most of that (14,100) in Placer County. On average, the residents of rural parcels represent 3.5 percent of unincorporated area population, but that ranges from as high as 35 percent in Solano to as low as 1 percent for Sacramento County.

Fiscal Impacts

Property Tax Revenue: Rural parcels identified in Region B generated an estimated $5.69 million in annual property tax revenues. Of this:

- $4.11 million (72 percent) is from developed parcels, and
- $1.58 million (28 percent) is from undeveloped parcels.

Road Costs: Rural parcels identified in Region B have approximately $1.97 million in rural road costs attributed to them annually. Of this:

- $1.56 million (79 percent) is the estimated cost share borne by developed parcels, and
- $0.41 million (21 percent) is the share allocated to undeveloped lots.

Resident-Related and Administrative Costs: For Region B, the resident-related annual net cost of all identified rural parcels is estimated at:

- $7.25 million, or an average of $617 per developed parcel.
- In addition to resident-related costs allocated to developed parcels, it is estimated that undeveloped parcels require county administrative services averaging $50 per parcel.
- The combined total resident-related and administrative costs for the region are estimated at $8.02 million net annual cost. Every county shows a net cost, with the major shares in Placer ($3.98 million annual shortfall) and Solano ($2.55 million annual shortfall).

School Transportation Costs: Region B's developed rural parcels account for an estimated $1.44 million in annual school bus service costs.

Regional Shortfall: Region B has a total net cost (annual shortfall) of $5.74 million. This figure was arrived at by contrasting property tax revenue with costs for roads, resident-related and per parcel administrative items, and school district expenditures for busing rural students.

REGION B

YOLO COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	8	14.02	$11,688	$1,877
At-Risk Ag	<05	U	99	329.94	$1,247,531	$85,658
At-Risk Ag	<10	U	89	640.70	$2,718,197	$233,961
Threatened Ag	10+	U	252	3,838.40	$9,726,154	$490,538
At-Risk Ag	<02	D	2	3.06	$171,179	$174,349
At-Risk Ag	<05	D	12	45.26	$390,003	$1,069,748
At-Risk Ag	<10	D	11	82.92	$276,153	$1,811,617
Threatened Ag	10+	D	108	1,763.29	$5,579,358	$8,420,205
Ranchette	<02	U	14	23.58	$213,728	$292,093
Ranchette	<05	U	79	228.94	$1,525,703	$12,895
Ranchette	<10	U	55	364.05	$3,431,627	$90,910
Ranchette	10+	U	39	521.31	$4,980,164	$28,780
Ranchette	<02	D	29	48.75	$1,303,493	$2,300,564
Ranchette	<05	D	156	526.59	$6,341,333	$12,606,059
Ranchette	<10	D	139	844.64	$7,629,764	$11,945,746
Ranchette	10+	D	81	1,166.49	$5,132,666	$7,642,319
TOTALS			**1,173**	**10,442**	**$50,678,741**	**$47,207,319**

SACRAMENTO COUNTY *(RESULTS ADJUSTED BASED ON PARCEL DATA SUPPLIED BY COUNTY)*

TYPE	SIZE	DEV	PARCELS	ACREAGE	*ASSESSED* LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	60	105.75	$574,540	$402,180
At-Risk Ag	<05	U	298	946.65	$4,023,263	$1,141,340
At-Risk Ag	<10	U	327	2657.78	$9,820,497	$2,756,937
Threatened Ag	10+	U	877	12,034.20	$38,521,474	$14,282,822
At-Risk Ag	<02	D	11	19.02	$388,217	$775,093
At-Risk Ag	<05	D	67	215.15	$1,961,307	$4,520,021
At-Risk Ag	<10	D	85	746.13	$4,036,563	$7,476,260
Threatened Ag	10+	D	242	3,579.88	$15,923,306	$23,393,898
Ranchette	<02	U	1,925	3,419.25	$57,087,798	$4,104,100
Ranchette	<05	U	5,670	17,986.35	$245,279,855	$5,471,164
Ranchette	<10	U	2,012	12,976.22	$145,969,499	$3,003,916
Ranchette	10+	U	610	7,375.80	$60,289,789	$624,640
Ranchette	<02	D	348	614.98	$25,178,511	$46,907,964
Ranchette	<05	D	1,275	4,087.85	$77,550,602	$149,438,925
Ranchette	<10	D	522	3,642.87	$42,184,435	$65,208,762
Ranchette	10+	D	169	2,194.12	$12,605,219	$18,501,782
TOTALS			**14,498**	**72,602**	**$741,394,876**	**$348,009,804**

U = Undeveloped D = Developed

PLACER COUNTY *(PARCEL DATA FOR WESTERN SECTION OF COUNTY ONLY)*

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	13	22.14	$266,867	$0
At-Risk Ag	<05	U	41	137.89	$593,706	$155,861
At-Risk Ag	<10	U	60	416.20	$1,623,416	$395,915
Threatened Ag	10+	U	133	2,126.54	$6,438,578	$952,763
At-Risk Ag	<02	D	0	0.00	$0	$0
At-Risk Ag	<05	D	0	0.00	$0	$0
At-Risk Ag	<10	D	0	0.00	$0	$0
Threatened Ag	10+	D	0	0.00	$0	$0
Ranchette	<02	U	171	291.45	$3,643,729	$2,129
Ranchette	<05	U	694	2,249.26	$24,742,720	$25,365
Ranchette	<10	U	497	3,229.34	$30,148,690	$25,591
Ranchette	10+	U	266	3,481.56	$24,801,464	$43,381
Ranchette	<02	D	506	856.04	$19,472,171	$44,958,118
Ranchette	<05	D	2,779	8,529.15	$141,444,860	$299,330,831
Ranchette	<10	D	1,614	10,109.24	$100,027,246	$183,191,292
Ranchette	10+	D	738	9,948.23	$49,496,777	$72,688,751
TOTALS			**7,512**	**41,397**	**$402,700,224**	**$601,769,997**

SOLANO COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	15	25.86	$266,923	$61,106
At-Risk Ag	<05	U	77	269.81	$1,618,874	$58,466
At-Risk Ag	<10	U	132	1,009.95	$4,403,390	$100,880
Threatened Ag	10+	U	317	4,746.68	$11,575,151	$395,908
At-Risk Ag	<02	D	1	1.96	$6,159	$70,822
At-Risk Ag	<05	D	14	49.48	$429,516	$974,978
At-Risk Ag	<10	D	38	319.35	$2,137,868	$3,836,604
Threatened Ag	10+	D	142	2,208.21	$9,862,125	$13,830,047
Ranchette	<02	U	46	80.42	$2,737,627	$10,458
Ranchette	<05	U	284	1,008.26	$20,257,107	$54,960
Ranchette	<10	U	180	1,232.72	$16,339,973	$52,871
Ranchette	10+	U	129	1,809.74	$21,729,236	$12,778
Ranchette	<02	D	130	230.02	$7,057,140	$12,907,346
Ranchette	<05	D	1,457	4,771.46	$101,265,601	$187,260,657
Ranchette	<10	D	800	4,861.47	$65,668,673	$112,473,335
Ranchette	10+	D	271	3,808.26	$22,045,916	$34,047,697
TOTALS			**4,033**	**26,434**	**$287,401,279**	**$366,148,913**

REGION B TOTALS	**27, 216**	**150,875**	**$1,482,175,120**	**$1,363,136,033**

U = Undeveloped D = Developed

Region C—Northern San Joaquin Valley

San Joaquin, Stanislaus and Merced Counties

San Joaquin, Stanislaus and Merced counties are some of the most productive agricultural counties in California as well as the nation. Nationally ranked fifth, tenth and eighth in agricultural income respectively, their total farmgate value in 1997 totaled $4,335,851,800. Encompassing 2,652,252 acres—almost 4,278 square miles—over 89 percent of the three-county area is in agricultural use.

The region's proximity to the Bay Area and the ever-expanding Sacramento metropolis is providing it with a mixed blessing of economic options. San Joaquin and Stanislaus counties are receiving thousands of Bay Area commuters who are exchanging long commute times for "affordable" housing, as well as manufacturing and distributing companies that are relocating to the area to take advantage of low land values and convenient transportation links. This influx of new residents and industry is allowing the counties to diversify their economies—but at the expense of the agricultural and food processing sectors.

The region's current population of 1,067,200 residents is anticipated to more than double to 2,624,900 residents within the next 40 years. During this same time period, the region's urban areas are expected to expand from 149,093 acres, or 240 square miles, to more than 402 square miles.

The Northern San Joaquin Valley region is intensively farmed. Dairy, tree crops and grapes are the top-dollar producing commodities. The region also has the highest percentage of acres in rural parcels that continue to be productively farmed.

The Northern San Joaquin region accounts for 19,479 rural parcels, identified by the study, totaling 182,330 acres. Almost half of these are located in San Joaquin County (49 percent), followed by Merced (34 percent) and Stanislaus (17 percent). Of the total, 64 percent are developed.

Using assessor land use designator codes it was determined that Region C has 8,680 ranchettes totaling 41,702 acres. The region also has 3,599 at-risk agricultural parcels totaling 24,174 acres. Threatened agricultural parcels in the region totaled 7,200 for 116,455 acres.

Forty-five percent of the study's identified rural parcels in Region C, and 23 percent of the acreage, is listed by local assessors as ranchettes. Sixty-four percent of these (5,538 parcels, or 27,808 acres) are located in San Joaquin County. Merced County has the next highest number of ranchettes in the region with 1,956 parcels totaling 7,538 acres. Stanislaus County has 1,186 ranchette parcels totaling 6,356 acres.

Seventy-seven percent of the ranchettes in Region C (6,992 parcels, or 31,960 acres) have been developed. The average size of these developed ranchette parcels is 4.57 acres. The regional average for the study's identified developed

rural parcels is 8.6 acres. This average size increases to 10.8 acres for identified undeveloped rural parcels.

The population on these developed rural parcels is estimated at 31,200 for the region, with just over half of that in San Joaquin County. On average, the residents of these parcels represent 10 percent of the unincorporated-area population within the region.

- Developed rural parcels under five acres in size that were identified in this study are most likely to just have a homesite. Only 25 percent of acreage in this size group is assumed to still be in some form of production agriculture. Only 45 percent of the acreage of undeveloped parcels in this size group is estimated to have some production agriculture. The remaining acreage lies fallow awaiting homesites.

- The percentage of production agriculture on identified developed rural parcels increases to over 50 percent with parcels in the five- to 10-acre size group. These parcels are often located on good soil. An even higher percentage—70 percent—of the acreage of this size-group's undeveloped parcels is assumed to host production agriculture operations.

- As expected, the highest percentage of production ag operations are found in the 10- to 20-acre size category—even on developed parcels (those with homesites on them). In Merced County, for example, 20-acre splits are common in agricultural areas but they are farmed contiguously.

Fiscal Impacts

Property Tax Revenue: Rural parcels identified in the study account for $4.22 million in estimated annual property tax revenue to Region C counties. Of this:

- $3.53 million (84 percent) is generated from developed parcels, and

- $0.70 million (16 percent) is from undeveloped parcels.

Road Costs: identified rural parcels have approximately $2.3 million in rural road costs attributable to them annually.

- $2.04 million is for the cost share borne by developed parcels, and

- $0.26 million is the share allocated to undeveloped lots.

Resident-Related and Administrative Costs: For Region C, the resident-related annual net cost of identified rural parcels is estimated at:

- $4.92 million, or an average of $394 per developed parcel.

- In addition to resident-related costs allocated to developed parcels, it is estimated that undeveloped parcels require county administrative services averaging $50 per parcel.

- The combined total resident-related and administrative costs for the region are estimated at $5.27 million net annual cost. Every county shows a net cost, with the major share in San Joaquin ($3.26 million annual shortfall).

School Transportation Costs: Region C's developed rural parcels, identified in the study, account for an estimated $1.78 million in annual school bus service costs.

Regional Shortfall: Region C has a total net cost (annual shortfall) of $5.13 million. This figure is arrived at by contrasting property tax revenue with costs for roads, resident-related and per parcel administrative items, and school district expenditures for busing rural students.

REGION C

SAN JOAQUIN COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	60	100.50	$355,805	$593,958
At-Risk Ag	<05	U	299	1,088.21	$4,297,064	$1,705,098
At-Risk Ag	<10	U	579	4,520.33	$15,556,364	$6,688,278
Threatened Ag	10+	U	1,348	20,789.13	$63,593,274	$35,611,235
At-Risk Ag	<02	D	3	4.92	$25,548	$177,607
At-Risk Ag	<05	D	71	239.79	$2,237,731	$4,479,858
At-Risk Ag	<10	D	310	2,634.25	$13,373,633	$25,758,130
Threatened Ag	10+	D	1,422	22,247.64	$87,886,672	$129,654,296
Ranchette	<02	U	103	170.98	$2,274,849	$446,889
Ranchette	<05	U	420	1,416.82	$13,996,009	$950,426
Ranchette	<10	U	294	2,162.14	$14,236,611	$1,259,036
Ranchette	10+	U	144	1,868.34	$8,901,604	$189,757
Ranchette	<02	D	621	1,049.18	$28,698,336	$55,223,892
Ranchette	<05	D	2,154	7,161.51	$109,383,653	$206,147,762
Ranchette	<10	D	1,458	9,894.32	$91,650,062	$148,774,499
Ranchette	10+	D	344	4,084.80	$29,906,633	$45,267,637
TOTALS			**9,630**	**79,433**	**$486,373,848**	**$662,928,358**

STANISLAUS COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	9	15.35	$17,684	$12,817
At-Risk Ag	<05	U	57	200.11	$960,755	$129,107
At-Risk Ag	<10	U	148	1,276.82	$3,317,590	$854,039
Threatened Ag	10+	U	411	6,547.22	$11,560,690	$2,760,657
At-Risk Ag	<02	D	10	16.90	$2,087,927	$1,085,493
At-Risk Ag	<05	D	76	260.10	$3,994,518	$7,854,856
At-Risk Ag	<10	D	339	3,059.33	$17,452,555	$28,543,836
Threatened Ag	10+	D	1,063	17,679.18	$56,307,380	$99,332,298
Ranchette	<02	U	14	23.62	$857,288	$17,073
Ranchette	<05	U	92	293.53	$4,865,602	$58,877
Ranchette	<10	U	55	429.55	$5,629,069	$56,037
Ranchette	10+	U	33	525.76	$10,735,941	$15,998
Ranchette	<02	D	81	144.21	$4,456,702	$6,819,126
Ranchette	<05	D	528	1,765.55	$32,764,059	$49,318,637
Ranchette	<10	D	318	2,369.93	$22,139,431	$30,971,525
Ranchette	10+	D	65	803.85	$5,418,634	$7,881,989
TOTALS			**3,299**	**35,411**	**$182,565,825**	**$235,712,365**

U = Undeveloped D = Developed

MERCED COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	19	32.00	$94,494	$31,637
At-Risk Ag	<05	U	266	1,016.58	$3,903,470	$710,354
At-Risk Ag	<10	U	559	4,345.80	$13,837,140	$1,885,317
Threatened Ag	10+	U	1,561	25,798.94	$70,694,221	$8,855,530
At-Risk Ag	<02	D	11	19.20	$122,395	$521,087
At-Risk Ag	<05	D	215	857.13	$6,043,598	$13,419,285
At-Risk Ag	<10	D	568	4,486.31	$23,907,240	$41,523,725
Threatened Ag	10+	D	1,395	23,393.08	$79,318,826	$104,393,068
Ranchette	<02	U	82	138.50	$1,488,921	$66,294
Ranchette	<05	U	264	852.21	$8,893,356	$162,450
Ranchette	<10	U	113	791.19	$8,948,765	$38,738
Ranchette	10+	U	74	1,068.94	$15,805,317	$50,943
Ranchette	<02	D	384	660.47	$9,803,633	$25,882,940
Ranchette	<05	D	851	2,663.54	$25,267,245	$56,541,832
Ranchette	<10	D	159	980.39	$6,597,297	$10,870,949
Ranchette	10+	D	29	382.30	$1,576,460	$2,147,832
TOTALS			**6,550**	**67,487**	**$276,302,378**	**$267,101,981**
REGION C TOTALS			**19,479**	**182,330**	**$945,242,051**	**$1,165,742,704**

U = Undeveloped D = Developed

Region D—Southern San Joaquin Valley

Madera, Fresno, Kings, Tulare and Kern Counties

This south valley region is by far the largest in the Central Valley Ranchette Study, accounting for more than half of the study's identified rural parcels.

The distribution and use of small parcels is variable by county in this region. Many of the 10- to 20-acre parcels located in agricultural areas in the Southern San Joaquin Valley region are farmed as part of larger units. This region has higher value field crops because, once the grazing land is subtracted, most of the farmlands are in higher value crops such as hay and cotton. For example, hay averages $850 per acre, and there is twice as much hay as irrigated pasture (at an average $110 per acre). Overall, however, there is somewhat less estimated agricultural production on small parcels than in the Northern San Joaquin Valley Region—59 percent of the total versus 67 percent.

County variations are considerable:

- Kern County dominates the region in both numbers and acreage of the study's identified rural parcels. Most of the small parcels there, however, are in desert areas not viable for agriculture. Moreover, there is very little farming on parcels smaller than 20 acres in size.

- Kings County is characterized by variable-sized parcels, some intensively farmed, in the agricultural area. On the other hand, many parcels are in areas of purely residential use.

- In contrast, most of the small parcel subdivisions in Fresno County occur near urban areas, which unfortunately are also in or near prime agricultural lands. The Fresno and Clovis urban areas are now contained by a ring of ranchette lots. This reflects the long history of ranchette lot speculation and housing development in the area. Large lot residential development occurred first in subdivisions such as Fig Garden during the 1920s. It spread across the northwest and western fringe of the city of Fresno before and after World War II. Beginning in the late 1950s it spread to the northeast of Fresno and Clovis and into the Sierra foothills. Since that time, there have been several major spurts of ranchette development in this region. The product of these booms can be seen in the expansive ranchette areas extending to the north and east of the Greater Fresno-Clovis Metropolitan Area.

- Both residential and commercial infill in Fresno County has occurred in some of the older ranchette areas, particularly to the north of the city and east of Highway 99. But most ranchette areas have resisted further densification. According to discussions with planners and developers, the large numbers of ranchettes on both the western and eastern fringes of the metropolitan area have inhibited markets for new, compact subdivision development in these areas. This has exacerbated the historical northward movement of growth for the metropolitan area as a whole, constraining the opportunities for the city of Fresno to build out in a compact urban form.

- Historically, land adjacent to Fresno's city limits has been zoned for two-acre minimum rural residential lots. A significant proportion of the land within the city's sphere of influence is developed as ranchettes. Seven percent of new housing built near Fresno in 1997 was ranchettes.[19]

- Madera County has more than 5,000 rural parcels identified in the study totaling 14,625 acres that are smaller than five acres in size. The majority of these are located to the northeast of the city of Madera and seem to house long-distance commuters to the Greater Fresno-Clovis Metropolitan Area.

The Southern San Joaquin region accounts for 100,100 rural parcels. The largest share of these parcels is located in Kern County (46 percent). Fresno County has the next greatest number with 26 percent followed by Tulare County (15 percent), Madera County (9 percent) and Kings County (5 percent).

Of the total, 31,600 parcels (32 percent) are developed. This ratio of developed lots, however, varies considerably from county to county: Sixty percent of Fresno and Madera counties' identified rural parcels have been developed. Tulare County has developed 51 percent, and Kings County 41 percent. Kern County, in sharp contrast, with the lion's share of the region's rural parcels, has only developed 2 percent.

Region C has identified a total of 630,500 acres in rural lots. Most of the acreage is located in the counties of Kern (33 percent), Fresno (31 percent) and Tulare (21 percent). Of this acreage regionally:

- 35 percent of the acreage is located on developed parcels, and

- 65 percent is on undeveloped parcels.

Again, however, there is sharp contrast between different counties:

- Over 50 percent of the rural parcels identified in this study for Madera and Fresno counties are developed.

- Tulare is not far behind, with 46 percent.

- Kern County, on the other hand, skews the average by having only 2 percent of its identified rural parcel acreage developed.

Using assessor land use designator codes, it was determined that Region D has 82,624 ranchettes totaling 409,743 acres. The region also has 6,301 at-risk agricultural parcels totaling 37,463 acres. Threatened agricultural parcels in the region totaled 11,137 parcels, or 183,326 acres.

Eighty-three percent of the rural parcels identified in Region D, and 65 percent of the acreage, is listed by local assessors as ranchettes. Fifty-six percent of these (45,942 parcels, or 203,828 acres) are located in Kern County. Fresno

County has the next highest number of ranchettes in the region with 20,227 parcels, totaling 121,4461 acres. Madera County follows with 7,090 ranchette parcels, totaling 34,032 acres. Tulare County has 5,967 ranchette parcels, totaling 28,138 acres, and Kings County has 3,398 ranchettes on 22,285 acres. *(It should be noted that the number of ranchettes listed for Kings County is a "best guess estimate" since no assessor-assigned land use codes were available. Land use designations were made in this county based on items such as identifiable homesites, enrollment in the Williamson Act, etc.)*

Thirty percent of the ranchettes in Region D (24,684 parcels, or 125,459 acres) have been developed. The average size of these developed ranchette parcels is 5.08 acres.

The average size for a developed rural parcel in this region is 7.0 acres, and 6.0 acres for undeveloped parcels. Again, this average is skewed by Kern County's overwhelming number of undeveloped parcels. The average size of rural parcels identified in this study for Kern County is 4.5 acres. In each county, undeveloped parcels tend to be slightly larger than developed parcels, and all of the four northerly counties in Region C have substantially larger average lot sizes for both developed and undeveloped parcels than Kern County.

The population on the region's developed parcels is estimated at 78,900. Almost half of that (49 percent) is located in Fresno County. On average, the residents of rural parcels represent 11.4 percent of the population in the unincorporated area. The highest shares are in Madera (22.6 percent) and Fresno (22.4 percent), while Kern County's rural parcel residents represent less than 1 percent of its unincorporated-area population.

Fiscal Impacts

Property Tax Revenue: Identified rural parcels account for $9.83 million in estimated annual property tax revenue to Region D counties. Of this:

- $7.38 million is generated from developed parcels, and
- $2.45 million is from undeveloped parcels.

Road Costs: these rural parcels have approximately $6.48 million in rural road costs attributable to them annually, with 71 percent of this allocated to the developed parcels.

Resident-Related and Administrative Costs: For Region D, the resident-related annual net cost of rural parcels identified by this study is estimated at:

- $9.87 million, or an average of $313 per developed parcel.
- In addition to resident-related costs allocated to developed parcels, it is estimated that undeveloped parcels require county administrative services averaging $50 per parcel.

- The combined total resident-related and administrative costs for the region are estimated at $13.29 million net annual cost. Every county shows a net cost, with the major share in Fresno County ($5.87 million), followed by Kern County ($2.72 million), and Tulare County ($2.16 million).

School Transportation Costs: Region D's developed rural parcels account for an estimated $4.06 million in annual school bus service costs.

Regional Shortfall: Region D has a total net cost (annual shortfall) of $14 million. This figure is arrived at by contrasting property tax revenue with costs for roads, resident-related and per parcel administrative items, and school district expenditures for busing rural students.

REGION D

MADERA COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	19	31.59	$152,284	$22,756
At-Risk Ag	<05	U	131	503.92	$1,654,488	$165,467
At-Risk Ag	<10	U	211	1,695.97	$3,725,413	$565,202
Threatened Ag	10+	U	696	12,165.12	$24,290,650	$3,547,045
At-Risk Ag	<02	D	5	8.61	$18,202	$115,710
At-Risk Ag	<05	D	89	364.22	$2,064,404	$4,708,531
At-Risk Ag	<10	D	211	1,679.07	$7,015,618	$9,494,549
Threatened Ag	10+	D	563	9,980.08	$23,548,715	$32,403,364
Ranchette	<02	U	264	444.29	$9,337,117	$32,845
Ranchette	<05	U	1,260	3,944.36	$44,210,708	$373,042
Ranchette	<10	U	551	3,727.36	$20,560,510	$149,315
Ranchette	10+	U	258	3,499.33	$12,343,952	$83,888
Ranchette	<02	D	568	974.70	$17,190,207	$41,441,981
Ranchette	<05	D	2,668	8,353.09	$96,878,045	$202,505,080
Ranchette	<10	D	1,087	7,291.57	$44,045,782	$77,866,930
Ranchette	10+	D	434	5,797.08	$20,560,230	$28,628,145
TOTALS			**9,015**	**60,460**	**$327,596,325**	**$402,103,850**

FRESNO COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	101	179.88	$638,417	$57,525
At-Risk Ag	<05	U	411	1,321.77	$3,303,521	$628,560
At-Risk Ag	<10	U	552	4,037.85	$12,830,265	$2,554,570
Threatened Ag	10+	U	1,817	30,580.32	$89,595,550	$34,426,548
At-Risk Ag	<02	D	13	22.61	$574,045	$982,821
At-Risk Ag	<05	D	95	348.76	$3,020,799	$6,787,642
At-Risk Ag	<10	D	428	3,628.76	$15,606,846	$25,625,226
Threatened Ag	10+	D	2,138	36,571.63	$121,241,588	$158,858,012
Ranchette	<02	U	377	653.62	$6,696,224	$422,787
Ranchette	<05	U	3,443	12,434.43	$79,866,783	$6,602,085
Ranchette	<10	U	1,851	11,650.02	$47,863,776	$3,831,937
Ranchette	10+	U	1,641	26,828.82	$44,356,321	$15,547,503
Ranchette	<02	D	1,213	2,156.95	$36,392,197	$102,081,925
Ranchette	<05	D	7,601	23,641.30	$276,047,843	$678,167,556
Ranchette	<10	D	2,469	16,067.26	$100,294,529	$196,229,315
Ranchette	10+	D	1,632	28,028.45	$63,767,902	$131,472,983
TOTALS			**25,782**	**198,152**	**$902,096,606**	**$1,364,276,995**

U = Undeveloped D = Developed

KINGS COUNTY *(AG PROPERTIES DETERMINED SOLELY BY WILLIAMSON ACT INCLUSION)*

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	26	42.88	$48,901	$50,550
At-Risk Ag	<05	U	183	543.64	$493,641	$158,370
At-Risk Ag	<10	U	180	1,242.84	$1,178,329	$304,049
Threatened Ag	10+	U	500	7,993.07	$7,307,099	$2,284,322
At-Risk Ag	<02	D	26	43.71	$393,802	$1,932,129
At-Risk Ag	<05	D	145	416.10	$1,986,937	$13,112,477
At-Risk Ag	<10	D	58	386.07	$989,369	$7,261,589
Threatened Ag	10+	D	201	3,157.83	$5,925,653	$23,442,156
Ranchette	<02	U	118	200.63	$2,028,270	$281,800
Ranchette	<05	U	592	1,772.69	$8,580,619	$991,203
Ranchette	<10	U	536	3,415.49	$10,884,649	$692,658
Ranchette	10+	U	632	8,997.53	$20,303,487	$1,076,345
Ranchette	<02	D	167	284.03	$4,626,357	$15,555,990
Ranchette	<05	D	855	2,428.28	$24,645,966	$73,785,934
Ranchette	<10	D	268	1,821.76	$11,892,089	$27,051,766
Ranchette	10+	D	230	3,364.50	$10,480,512	$22,612,347
			4,717	**36,111**	**$111,765,680**	**$190,593,685**

TOTALS

TULARE COUNTY *(EXCLUDING PARCELS EAST OF THE FOOTHILL PLANNING AREA; RESULTS ADJUSTED BASED ON PARCEL DATA SUPPLIED BY COUNTY)*

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	53	89.17	$509,754	$31,278
At-Risk Ag	<05	U	767	2,711.95	$9,870,705	$1,157,161
At-Risk Ag	<10	U	1,652	12,135.95	$32,259,500	$6,860,482
Threatened Ag	10+	U	3,162	48,400.28	$86,264,182	$23,223,485
At-Risk Ag	<02	D	20	35.33	$462,098	$1,178,450
At-Risk Ag	<05	D	238	930.19	$6,916,161	$17,615,506
At-Risk Ag	<10	D	662	4,930.56	$24,795,986	$58,655,869
Threatened Ag	10+	D	1,989	33,199.77	$76,162,282	$126,573,589
Ranchette	<02	U	153	258.95	$3,286,593	$187,425
Ranchette	<05	U	722	2,454.68	$20,469,577	$797,088
Ranchette	<10	U	395	2,422.30	$18,235,074	$432,920
Ranchette	10+	U	149	1,847.75	$9,652,646	$312,155
Ranchette	<02	D	429	744.94	$12,699,737	$34,403,655
Ranchette	<05	D	2,426	7,983.52	$90,006,204	$214,785,910
Ranchette	<10	D	1,390	8,484.92	$53,979,899	$117,584,270
Ranchette	10+	D	303	3,940.52	$14,871,522	$28,378,980
TOTALS			**14,510**	**130,571**	**$460,441,920**	**$632,178,223**

U = Undeveloped D = Developed

KERN COUNTY

TYPE	SIZE	DEV	PARCELS	ACREAGE	ASSESSED LAND VALUE	ASSESSED IMPROVEMENTS
At-Risk Ag	<02	U	1	1.82	$1,699	$0
At-Risk Ag	<05	U	11	31.87	$20,957	$2,998
At-Risk Ag	<10	U	13	97.41	$12,437	$0
Threatened Ag	10+	U	71	1,277.86	$532,855	$93,226
At-Risk Ag	<02	D	0	0.00	$0	$0
At-Risk Ag	<05	D	0	0.00	$0	$0
At-Risk Ag	<10	D	0	0.00	$0	$0
Threatened Ag	10+	D	0	0.00	$0	$0
Ranchette	<02	U	2,012	3,598.86	$23,143,884	$123,378
Ranchette	<05	U	28,079	73,565.15	$239,472,422	$1,397,786
Ranchette	<10	U	7,453	44,791.49	$95,794,539	$512,943
Ranchette	10+	U	7,454	77,776.69	$122,409,235	$469,457
Ranchette	<02	D	54	96.66	$837,802	$1,399,454
Ranchette	<05	D	658	1,780.21	$12,744,899	$13,469,024
Ranchette	<10	D	141	873.26	$3,149,169	$3,520,884
Ranchette	10+	D	91	1,345.77	$2,640,807	$2,115,520
TOTALS			**46,038**	**205,237**	**$500,760,705**	**$23,104,670**
REGION C TOTALS			**100,062**	**630,532**	**$2,302,661,236**	**$2,612,257,423**
CVRS TOTALS			**189,368**	**1,270,048**	**$6,058,782,708**	**$7,003,968,544**

U = Undeveloped D = Developed

RESEARCH SOURCES

Individuals

- Glenda Humiston — USDA Assistant Undersecretary
- Mary Handel — Land Use Consultant
- Darryl Goehring — Sacramento County Planning Department
- Amy Larson — California Oak Foundation
- Al Sokolow — U.C. Davis
- Carol Whiteside — Great Valley Center
- Rudy Platzek — Land Use Consultant

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END NOTES

[1] California Department of Conservation; Farmland Conversion Report 1994 to 1996.

[2] "Five acres Five Miles from Town." Reed Karaim. Preservation Magazine. January/February 1998.

[3] "Five acres Five Miles from Town." Reed Karaim. Preservation Magazine. January/February 1998.

[4] *Land Use Development in Gretna, Nebraska.* A Cost Analysis Center for Applied Urban Research. The University of Nebraska at Omaha, July 1, 1976.

[5] *A Framework for Estimating Some Economic Consequences of Rural Non-Farm Residential Development with Application to Persifer and Copley Township, Know County, Illinois.* Chicoine, David L.

[6] *More Houses, Fewer Farms? Land Use, Property Taxes, and Residential Development in the Town of Rice Lake.* Barrows, Richard; Huffman, Sam; Prenguber, Bruce; Repp, Ward; Schmid, Karl. University of Wisconsin, Madison, Wisconsin. October 1975.

[7] *Rural vs. Suburban Residential Choice: A Progress Report.* Gray, Morris J., Strathman, James G., Levin, Irwin P., Dueker, Kenneth J. August 1978. Technical Report 107A. Institute of Urban and Regional Research, University of Iowa, Iowa City, Iowa 52242.

[8] The following counties received only a partial download of parcel data: Alameda, Colusa, Kern and Placer.

[9] Geographic Information System.

[10] Sacramento and Tulare counties.

[11] The Fresno County Planning Department and the California Department of Water Resources were generous in making data available and very helpful in assisting me to interpret data and convert it to a compatible format.

[12] ARC/INFO is the copyrighted GIS software from Environmental Systems Research Institute, Inc.

[13] Based on County Assessor codes, as interpreted by AFT.

[14] Based on data from the Department of Water Resources (DWR) indicating active farm uses of parcels at the time of the DWR survey.

[15] *Fiscal Costs and Public Safety Risks of Low- Density Residential Development on Farmland: Findings from Three Diverse Locations on the Urban Fringe of the Chicago Metropolitan Area.* Esseks, J. Dixon; American Farmland Trust Center for Agriculture in the Environment, De Kalb, Ill.

[16] According to the Department of Finance data, the 12/31/96 unincorporated population of the 18-county CVRS study area is 2,042,169 (this number does not include western Placer County).

[17] This represents more than two-thirds (25,783) of the total number of small rural parcels identified for Fresno County.

[18] California Department of Finance population projection figures.

[19] Steven Moss: *Smart Growth Versus Sprawl in California.* May 1999.

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