

A topographic map of California, showing the state's outline and internal terrain. The map uses a color gradient from green and blue for lower elevations to yellow, orange, and red for higher elevations. The map is oriented vertically, with the top of the state at the top of the page.

Alternatives for

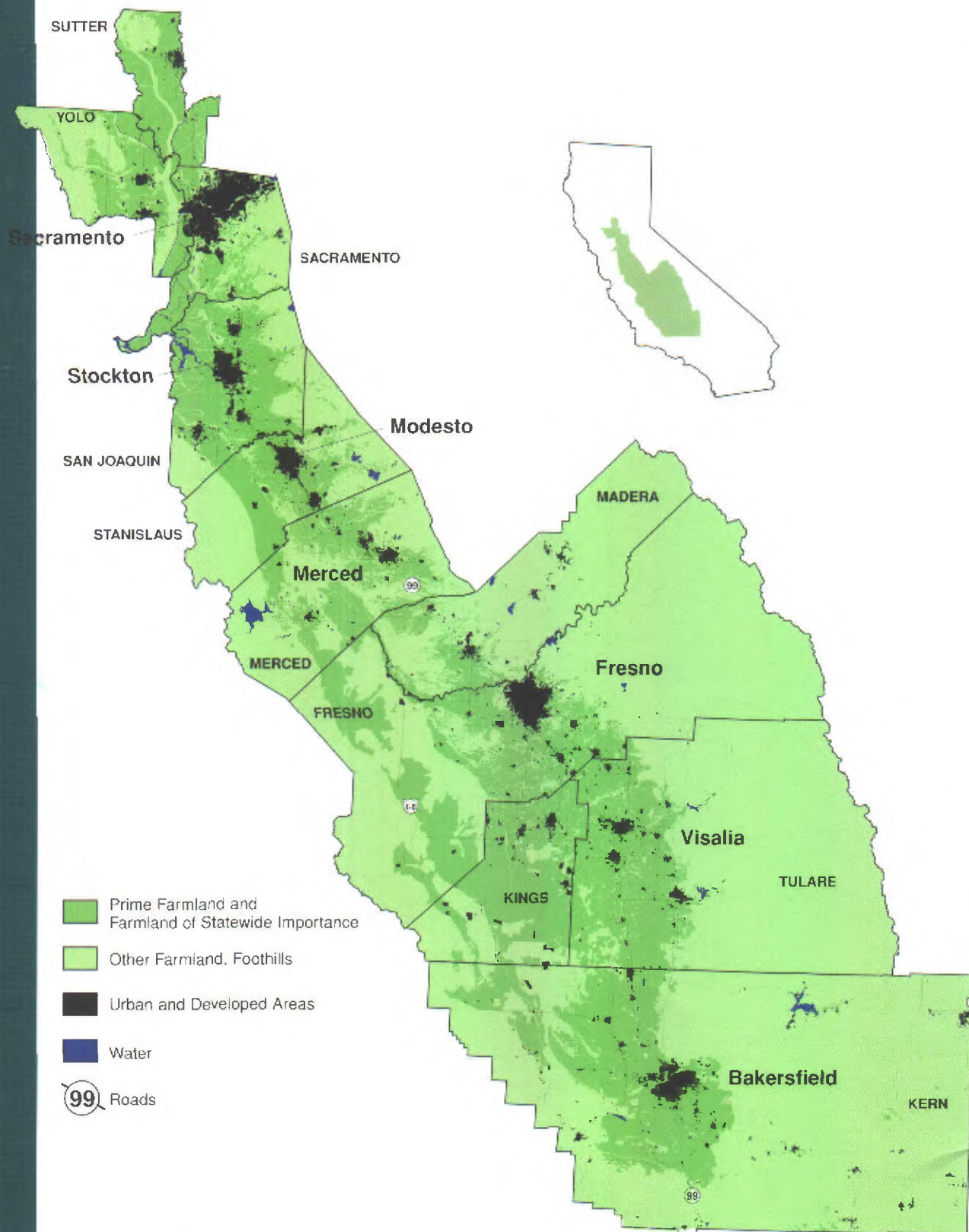
**Future
Urban
Growth in
California's
Central
Valley:**

**The
Bottom
Line**

for Agriculture and Taxpayers

California's Central Valley

Developed Land In 1992



Alternatives for
Future Urban Growth
In California's Central Valley:

The Bottom Line
for Agriculture and Taxpayers

Summary Report
October 1995



American Farmland Trust is a national, nonprofit organization working to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment.

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About American Farmland Trust

American Farmland Trust is a private, nonprofit organization that works cooperatively with farmers, public officials and partner organizations to protecting the nation's best farmland and promote farming practices that lead to a healthy environment. AFT's action-oriented programs include technical assistance in the formation of public policy, public education and land conservation demonstration projects. Founded in 1980, AFT has 30,000 members nationwide and six offices around the country, including a field office in Davis, Calif.

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Alternatives for Future Urban Growth in California's Central Valley: The Bottom Line for Agriculture and Taxpayers

Executive Summary

California's Central Valley is the nation's most important agricultural resource, producing 250 different commodities worth more than \$13 billion a year. The valley's population is expected to triple between now and the year 2040, putting tremendous pressure on agricultural land and public services. The economic impact of this growth on agriculture and taxpayers will vary depending on the pattern that new development assumes. To illuminate the choices faced by those who live and farm in the Central Valley, American Farmland Trust commissioned geographic and economic experts to project and analyze the impact of future growth on agriculture and taxpayers under two different scenarios — low-density urban sprawl and a more compact, efficient growth pattern at a higher density. The study found that —

■ Low-density urban sprawl would consume more than 1 million acres of farmland by 2040. Approximately 60 percent of this is likely to be prime farmland and farmland of statewide importance. In addition, agriculture would experience increased risks and costs, and lower productivity, within a one-third mile wide "zone of conflict" around urban areas, totaling 2.5 million acres. By contrast, more compact, efficient growth would reduce farmland conversion to 474,000 acres, including 265,000 acre of prime and important farmland, and would shrink the zone of conflict to 1.6 million acres.

■ Low-density urban sprawl would reduce direct agricultural commodity sales by \$2.1 billion a year and related sales of suppliers, processors and other agricultural support businesses by \$3.2 billion annually. Compact, efficient growth would reduce commodity sales by \$970 million annually and related sales by \$1.5 billion. The cumulative loss of direct and indirect agricultural sales between now and the year 2040 would be \$72 billion higher for low-density urban sprawl than for compact, efficient growth.

■ The cost of providing the current level of public services to low-density urban sprawl would exceed the revenues of Central Valley cities by about \$1 billion annually, necessitating a reduction of services or an increase in taxes. Compact, efficient growth would produce an annual budget surplus of \$200 million, enabling services to be maintained or slightly improved. The cumulative 1992-2040 difference in the cost of taxpayer-financed services between low-density urban sprawl and compact, efficient growth will be in the range of \$29 billion.

The tragic waste of agricultural resources and tax dollars can be avoided by encouraging more compact, efficient growth in the Central Valley. American Farmland Trust recommends that stakeholders in the valley — agriculture, developers, environmental and civic groups, taxpayers and public officials — reach consensus on ways to achieve this goal.

Introduction

From space, California's great Central Valley is the one of the most distinctive geographic features on the North American continent. (Cover) This discrete basin, formed by the Sierra Nevada to the east and the coastal mountain ranges to the west, is small compared with other agricultural regions; it is only 300 miles long and averages 50 miles wide. But, despite its limits — or because of them — the Central Valley is the single most important agricultural resource in the United States and, arguably, the world.

The Central Valley encompasses parts of 21 counties. Eleven of these counties, which are the object of this study, produce 250 different crops — from almonds to zucchini — on 6.7 million acres of irrigated cropland.¹ Those crops had a farm gate market value of \$13.3 billion in 1994, representing 8 percent of total U.S. agricultural sales from an area comprising just over 1/2 percent of America's land in farms. (Table 1)

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Table 1
Agricultural Production of Central Valley Counties

County	Market Value of Agricultural Products Sold (1994)	Rank Among U.S. Counties
Fresno	\$3,084,870,800	1
Tulare	\$2,504,944,000	2
Kern	\$1,949,768,000	3
Merced	\$1,251,723,000	6
Stanislaus	\$1,121,853,000	7
San Joaquin	\$1,121,395,000	10
Kings	\$812,658,000	16
Madera	\$614,618,000	23
Yolo	\$297,905,500	69
Sutter	\$343,203,000	80
Sacramento	\$231,163,000	83
Total	\$13,334,101,300	--

Market value data from California Department of Food & Agriculture, 1994
Ranking data on 3,069 counties from U.S. Census of Agriculture, 1992

The relationship between farming and the natural environment in the Central Valley has been the subject of ongoing debate — some would say conflict. Competition for scarce water resources,

pesticide use and endangered wildlife species has dominated public concern. While these issues won't be resolved tomorrow, there are encouraging signs of progress.

Urban development is threatening to transform the Central Valley.

Meanwhile, another resource management concern affecting the Central Valley — one that could overwhelm both agriculture *and* the environment — has been rapidly gaining momentum. Driven by one of the nation's highest population growth rates, urban development is threatening to transform this magnificent valley from a patchwork quilt of farms and natural areas into an urban desert.

Sacramento and Fresno have become major urban areas, with Stockton, Modesto and Bakersfield not far behind. Residential and commercial growth is consuming an estimated 15,000 acres of Central Valley farmland each year.² In the future, this transformation is expected to accelerate. The valley's current population of about 4 million is expected to triple by the year 2040, according to the California Department of Finance. (Table 2)

**Table 2
Projected Population Growth in the Central Valley**

County	Population		Projected Growth	
	In 1992	In 2040	People	Percent
Fresno	673,900	2,497,700	1,823,800	271%
Kern	549,800	1,954,800	1,405,000	356%
Kings	102,500	296,500	194,000	289%
Madera	89,800	317,900	228,100	354%
Merced	180,600	626,900	446,300	347%
Sacramento	1,051,400	2,352,000	1,300,600	224%
San Joaquin	483,800	1,356,500	872,700	280%
Stanislaus	376,100	1,224,900	848,800	326%
Sutter	65,100	271,500	206,400	417%
Tulare	314,600	952,100	637,500	303%
Yolo	142,500	386,100	243,600	271%
Total	4,030,100	12,236,900	8,206,800	304%

Data and projections from California Department of Finance (1993)

Obviously, this kind of growth will have an enormous impact on agricultural land in the Central Valley. It will also create pressure for higher taxes to pay for vastly expanded public services. But the impact of future urban development on agriculture and valley

taxpayers will vary dramatically depending on how population growth is accommodated. To the extent new development utilizes land more efficiently — the more compact and inexpensive-to-service new subdivisions and commercial centers are — the less the impact on the nation's food production capacity, on the agricultural economy and on every resident's pocketbook.

In the past, residential and commercial development has occupied about one acre of Central Valley land for each three new households. This low-density form of development does not use land very efficiently. Some call it "urban sprawl" because it is so spread out. With better community planning and urban design, it can be improved upon without sacrificing public safety or the California lifestyle. And with more compact, efficient development, the impact on agriculture and taxpayers can be significantly reduced.

Motivated by a concern that low-density urban sprawl could devastate Central Valley agriculture and impose a crushing burden on taxpayers, American Farmland Trust commissioned this study of alternative growth patterns and their potential impact on the agricultural industry and on the financing of public services. By attempting to forecast the future under different growth scenarios, our purpose is to illuminate the bottom line choices faced by farmers, taxpayers and their governmental representatives as the population of the Central Valley expands over a finite supply of the world's most unique farmland.

Study Methods

AFT's study of alternatives for future Central Valley growth has two parts:

- Computer mapping of probable development patterns.
- Analysis of the potential economic impact of these patterns on the agriculture industry and the financing of public services.

Both parts of the research were coordinated so that the assumptions for each would be the same and the output of the mapping could become the basis of the economic analysis.³

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Computer Mapping

The mapping program was created at the Institute for Urban and Regional Development of the University of California by Dr. Ted Bradshaw, now an assistant professor of human and community development at U.C. Davis, and Brian Muller, a Ph.D. candidate in city and regional planning at U.C. Berkeley. The objective of this research was to forecast probable future development patterns under low-density urban sprawl and more compact growth scenarios. There were four steps in this research:

- An 11-county region of the Central Valley (map, inside front cover) was divided into 750,000 potential development tracts by overlaying data on land features, census demographics and political boundaries that give each tract its distinctive characteristics;
- A statistical model for predicting future development patterns was created by correlating actual development trends during 1988-1992 with the characteristics of individual tracts;
- The model was used to map probable future development patterns under different assumptions about population density and distribution corresponding to low-density urban sprawl and compact growth scenarios;
- Preliminary maps were reviewed with local planning officials to identify and adjust unrealistic results.

In addition to mapping probable development patterns,⁴ the computer mapping model also compiled summary data on the acreage and location of farmland projected for development. This data then became the basis for the economic analysis.

Economic Analysis

The economic analysis was conducted by the consulting firm of Strong Associates of Oakland, Calif. The principal of this firm, David Strong, is an urban and agricultural economist with more

than 20 years of experience in California. The objective of this analysis was to predict the impact of farmland losses under contrasting growth scenarios on the agriculture industry and on the cost to taxpayers of financing public services like police, fire, roads, parks, water and sewer systems.

The agricultural impact analysis included:

- An estimate of the type of crops likely to be affected by probable development patterns forecast by the computer mapping model was made from field visits and consultation with local agricultural experts;
- An estimate of the value of crop sales that would be lost to future development of farmland was made based on current commodity prices;
- The decline in farm-related economic activity (equipment purchases, farmer income, etc.) was estimated using an input-output model developed by George Goldman of the University of California Cooperative Extension Service.

The analysis of public service financing included:

- A detailed case study of anticipated development in Fresno County was used to determine public service costs related to the location and density of development;⁵
- An analysis of 39 Central Valley city budgets was used to determine public service costs and revenues related to the number of residents, jobs and acreage of developed areas;
- Official population and employment projections, and the development data from the mapping model, were used to calculate the anticipated tax revenues from, and costs of providing public services to, contrasting urban sprawl and compact development scenarios.
- All figures were converted into 1993 dollars to put economic impacts in today's perspective.

Basic Assumptions

Any forecast of future development must necessarily rely on assumptions. To ensure that our forecast of development patterns and associated economic impacts was as realistic as possible, our assumptions and analysis consistently err on the conservative side. We also verified our findings by consulting with agricultural and planning officials in each Central Valley county. The result, we believe, is a straight-forward analysis of the basic land use options for the Central Valley — a continuation of low-density sprawl or progress toward more compact, efficient urban growth.

No Growth is not an Option for the Central Valley

The fundamental assumption of our study is that urban growth in the Central Valley will occur. Thus, we do not attempt to forecast an unrealistic "no growth" future. Rather, the study analyzes two basic ways of accommodating the same population increase: low-density urban sprawl and compact, efficient growth.

Historic Development Trends Predict Future Patterns

We assumed that historic development trends are a reliable predictor of where growth will occur in the future — unless land use policies are changed. Our computer model used actual development trends from 1988 through 1992, compiled by the Farmland Mapping and Monitoring Program of the California Department of Conservation. This time frame included roughly equal periods of boom and bust, and is therefore considered a reasonable approximation of the long-range economic conditions that will influence urban growth. Contrasting growth scenarios were produced by varying the assumptions about the population density and distribution that would result from different land use policies.

Experts analyzed two basic ways of accommodating the same population increase: low-density urban sprawl or compact, efficient growth.

Low-Density Urban Sprawl and Compact Growth Scenarios

The main focus of our study is the contrast between development at different urban densities. We therefore modeled and analyzed two basic scenarios. The first scenario assumes a business-as-usual, low-density approach based on a gross residential density (counting commercial land) of three dwelling

units per acre. This approximates the density of current urban development in much of the Central Valley. Both this scenario and the next assume that all new development will occur within urban service areas, thus underestimating the impact of "ranchette" development.

The second scenario is a more compact, efficient growth pattern based on a gross density of six dwelling units per acre, which is intended to represent a relatively conservative, realistically achievable goal for new development in the valley. Though higher density may be wise from the standpoint of maintaining Central Valley agriculture, we used six dwelling units per acre because development at this density would not depart significantly from traditional California-style subdivision patterns. It would consist mostly of single-family detached housing built somewhat closer together within currently designated urban growth areas, with superior urban and landscape design making up for smaller average lot size. The scenario also assumes that 10 percent of new population will be accommodated as urban infill requiring no additional farmland.

2040: A Not-So-Distant Planning Horizon

The year 2040 was chosen as the point in time for our geographic and economic analyses. This choice was dictated in part by the availability of official population projections, but it was also influenced by a desire not to set too narrow a planning horizon. In just 45 years — the same period of time covered by this study — Los Angeles County has been transformed from the top-producing agricultural county in the United States into the sprawling megalopolis it is today. The top producer distinction, once enjoyed by Los Angeles County, now belongs to Fresno County in the very heart of the Central Valley. It would be ironic — and tragic — if Fresno were to become another Los Angeles because those concerned about its future were too shortsighted.

It is most emphatically *not* too soon to begin planning for the consequences of growth that will occur within the lifespan of most Californians. Whether the projected tripling of population occurs precisely in the year 2040, or is reached a few years later — or *earlier* — the impact on agriculture and taxpayers will be approximately the same.

It has taken only 45 years for Los Angeles to be transformed from the top-producing U.S. farm county into the sprawling megalopolis it is today.

Study Findings

Impacts of Growth on Agriculture

Low-density urban sprawl will result in the loss of more than 1 million acres of Central Valley farmland by the year 2040.

By fundamentally altering the landscape of the Central Valley, urban growth will have major impacts on agriculture — its predominant land use and largest industry. Our study projects that low-density urban sprawl could consume or indirectly affect more than 3.6 million acres. This represents more than half of the 6.7 million acres of irrigated farmland on the valley floor in our 11-county study area. Whether this kind of impact would be a death blow to the industry remains to be seen, but it is clear that a more compact, efficient growth pattern could significantly reduce the impact, improving the chances that agriculture and urbanization can co-exist in the Central Valley.

A significant amount of Central Valley farmland can be conserved for agriculture, if growth assumes a more compact, efficient pattern instead of low-density urban sprawl.

A low-density urban sprawl growth scenario will result in the loss of more than 1 million acres of Central Valley farmland to development by the year 2040. (Table 3 and map 2 inside back cover.) More than 610,000 acres of this land will be prime farmland or farmland of statewide importance — the most productive in the valley.⁶ In some counties, the loss will be proportionately much greater because those counties are expected to absorb a larger share of total population growth. Fresno, Sacramento and Stanislaus counties, for example, can each expect to lose about 20 percent of their prime farmland and farmland of statewide importance, compared to an average of 12 percent for all valley counties studied. (Table 6 in Appendix)

**Table 3
Conversion of and Conflicts on Agricultural Land in Year 2040**

	Urban Sprawl	Compact Growth	Land Saved by Compact	As % of Sprawl
Acres Converted				
Prime & Important	613,669	265,937	347,732	57%
Other Farmland	421,808	208,433	213,375	51%
Total Converted	1,035,477	474,370	561,107	54%
Zone of Conflict	2,537,490	1,760,868	776,622	31%
Total Acreage Affected	3,572,967	2,235,238	1,337,729	37%

Projections from Muller and Bradshaw (1995)

If, on the other hand, a more compact, efficient pattern of growth results from a concerted effort by Central Valley communities to change the status quo, about 474,000 acres of farmland will be lost and, of this, about 266,000 acres will be prime or of statewide importance. With a more compact development pattern, more than half of the farmland that would otherwise be lost — approximately 350,000 acres of prime and statewide important farmland and 210,000 acres of other farmland — could be conserved for future agricultural production.

The potential "zone of conflict" between agriculture and sprawling residential subdivisions can be significantly reduced by more compact, efficient development.

The direct conversion of farmland is not the only way urbanization threatens agriculture. Farmland adjacent to residential development is more costly and risky to farm because of land use conflicts that inevitably arise. In the "zone of conflict," which we have assumed to extend approximately one third of a mile out from residential development, the spillover effects of agriculture such as noise, odors, blowing dust and pesticide use can irritate neighboring residents, increasing growers' risk of liability. Within this zone agriculture is also likely to suffer disruptions and economic losses from crimes such as pilferage of crops and vandalism of equipment. And productivity suffers as farmers avoid making capital improvements on land they believe will soon be urbanized.

Thus, it is of significant concern that low-density urban sprawl will, in addition to converting 1 million acres of farmland, subject commercial agriculture to increased risk on about 2.5 million acres of farmland that would be situated within the "zone of conflict" by the year 2040. (Table 3 and Table 7 in Appendix) A more compact growth pattern, however, would reduce this zone by nearly 40 percent to about 1.6 million acres, resulting in considerably less risk to remaining agricultural operations and less bother to suburban homeowners.

Low-density urban sprawl will have a much greater negative impact on the value of crops produced, agricultural income and jobs than will compact, efficient development.

The loss of farmland will translate into a significant economic loss to growers and many others who earn a living from agriculture in

More than \$2 billion a year in agricultural commodity sales will be lost to low-density urban sprawl in the Central Valley. There are 22 states that don't produce that much.

the Central Valley. By the year 2040, low density sprawl could reduce the *value of agricultural products grown* in the Central Valley by about \$2.1 billion annually.⁸ (Table 4) That would be equivalent to wiping out virtually the entire agricultural production of New York, Virginia, Oregon or Mississippi. In fact, the agricultural production of 22 states is less than what low-density urban sprawl could destroy in California's Central Valley.

Table 4
Summary of Impacts of Urban Growth on the Private Agricultural Economy
 Annual Losses Projected in Year 2040 (All figures except jobs in Millions of 1993 Dollars)

	Urban Sprawl	Compact Growth	Year 2040 Difference	1992-2040 Cumulative*
Direct Losses				
Sale of Agricultural Products	\$2,083	\$971	\$1,112	\$26,691
Grower and Farm Labor Income	\$873	\$405	\$468	\$11,239
Farm Jobs (by 2040)	16,760	7,814	8,946	NA
Indirect Losses				
Sale of Equipment, Fertilizer, etc.	\$3,183	\$1,477	\$1,706	\$40,934
Supplier & Processor Income	\$1,788	\$830	\$958	\$22,986
Jobs in Farm Related Businesses	22,991	10,696	12,295	NA
Total Economic Impact				
Sales	\$5,266	\$2,448	\$2,818	\$67,626
Income	\$2,661	\$1,235	\$1,426	\$34,225
Jobs	39,751	18,510	21,241	NA

* Cumulative difference assumes a straight line annual increase in cropland loss between 1992 and 2040. Table does not include losses in "zone of conflict." Projections from Strong (1995).

A compact, efficient development pattern, on the other hand, would reduce the year 2040 impact on crop production by more than half to about \$970 million lost annually. Over the period between now and 2040, the more compact growth scenario would save about \$27 billion in direct sales of agricultural commodities. (Table 4 and Table 8 in Appendix)

Another potential reduction in commodity production could occur as a result of conflicts between agriculture and residences within what we have called the "zone of conflict." Agricultural officials with whom AFT has consulted confirmed that a reduction in

productivity of 5 percent would not be unrealistic to assume within this area. Based on that assumption, the "zone of conflict" resulting from low-density urban sprawl would cause the loss of an additional \$645 million a year in commodity sales. A more compact growth scenario would result in a smaller loss of about \$454 million. The difference would be \$191 million in the year 2040 and a cumulative savings in crop sales of \$4.6 billion between now and then.

Farmland conversion will also result in *losses to agricultural support businesses* such as fertilizer and equipment suppliers, and fruit and vegetable processors. The indirect loss of sales to such businesses will be greater under a low-density urban sprawl scenario, reaching about \$3.2 billion in 2040. A more compact development pattern could significantly reduce the indirect costs of farmland loss to about \$1.5 billion annually. The cumulative difference would amount to about \$41 billion between now and 2040. (Table 4)

The decline in commodity and related supplier and processor sales will mean *lost income for growers and farm workers*. Low-density urban sprawl will result in a \$2.7 billion annual loss of farm income by 2040, compared to only \$1.2 billion for compact development. Cumulatively, the difference in farm income between now and 2040 will amount to about \$34 billion.⁹

Urbanization in the Central Valley will mean an overall increase in employment. But it is important to note that — like the loss of farmland and crop production — much of the potential loss of agriculturally related employment is avoidable. Low-density urban sprawl will result in the loss of nearly 40,000 farm sector jobs by 2040, while more compact efficient growth could halve the loss to less than 18,500. To put this difference in perspective, the jobs saved by compact, efficient growth would be equivalent to all civilians employed by the California military bases recently approved for closure.

The total annual adverse impact of low-density urban sprawl on the agricultural economy is expected to be in the range of \$5.9 billion a year by 2040, compared to \$2.9 billion for a more compact growth scenario. Between now and then, a more compact, efficient pattern of urbanization could save Central Valley agriculture about \$72 billion.

A more compact, efficient pattern of urbanization could save Central Valley agriculture about \$72 billion over the period we studied.

Impacts on Taxpayers and Public Services

The cost of providing public services to low-density urban sprawl will exceed the tax revenues of Central Valley cities by \$1 billion per year.

Agricultural producers and workers are not the only ones who have a stake in the pattern of future urban growth in the Central Valley. Everyone who lives there and pays taxes will feel it in their pocketbooks and probably in the quality of their lives. This is because development patterns affect the cost of everything from police protection to parks.

Low-density urban sprawl will be far more costly to service than compact urban development, necessitating an increase in taxes or a cutback in public services.

By the year 2040, the annual cost of providing public services to low-density urban sprawl development will exceed the revenues collected by Central Valley cities¹⁰ by more than \$1 billion. This chronic budget deficit, amounting to one-fifth of projected revenues, would probably mean a decline in those services and in the quality of life. To make up the deficit, taxes and fees, including some passed along by developers in the form of higher housing costs and special assessments, would have to be raised accordingly. (Table 5 and Table 9 in Appendix)

In contrast, a more compact growth pattern, allowing the same number of people to be serviced less expensively, would produce a collective annual city budget *surplus* of more than \$200 million, or 4 percent of revenues. Under this scenario, the current level of public services could be maintained and perhaps even be improved. This could be achieved without tax increases. Thus, between now and 2040, taxpayers would save almost \$29 billion.

Table 5
Projected City Revenues and Costs of Servicing New Development
 All figures for 2040 in Millions of 1993 Dollars (except Per Capita)

	Urban Sprawl	Compact Growth	2040 Difference	1992-2040 Cumulative
Annual Revenues	\$5,115	\$5,134	(\$19)	(\$466)
Annual Cost of Services	\$6,100	\$4,917	\$1,183	\$28,384
Net Suplus/(Deficit)	(\$985)	\$217	\$1,202	\$28,850
As Percent of Revenue	-19.3%	4.2%	23.5%	NA

Projections for 39 cities from Strong (1995)

Conclusions and Recommendations

AFT's computer simulation of alternatives for future urban growth in California's Central Valley shows that low-density urban sprawl will consume far more farmland than is necessary to house the anticipated population increase. The resulting waste of irreplaceable agricultural resources, not to mention billions of tax dollars, would be tragic.

This tragedy can be avoided by encouraging a more compact, efficient pattern of urban development that remains distinctly Californian in character. But, given the momentum of urban sprawl, this will happen only if a concerted effort is made by all those affected to reach consensus on definitive steps that can be taken in each Central Valley community to increase the efficiency of new development and protect the most important farmland.

The basic goals that would improve the bottom line for Central Valley agriculture and taxpayers seem quite clear:

- Housing developments that make much more efficient use of land with innovative, attractive architectural and neighborhood design.
- Commercial development and public facilities that minimize the amount of farmland and water they consume.
- New development that is contiguous to existing developed areas rather than fragmenting outlying agricultural areas.
- Maximum infill development of vacant and underused land within city limits.
- Reasonable, predictable rules for homebuilders and other developers with incentives for those who minimize public costs and agricultural impacts.

The tragic waste of farmland and tax dollars can be avoided by encouraging more compact, efficient urban growth patterns.

- Designation of the most important farmland in the Central Valley as a "strategic agricultural reserve" where nonfarm development is prohibited or strongly discouraged by local policies.

- Within these reserves, a secure supply of affordable irrigation water for growers and expanded financial incentives for landowners to permanently commit land to agricultural production.

Achieving those hallmarks of compact, efficient growth will not be easy in any community. And there must be some valley-wide perspective to ensure that efforts to promote compact, efficient growth in one city or county do not make the same task impossibly difficult in neighboring jurisdictions. To promote dialogue and action at both the community and regional levels, with the goal of achieving more compact, efficient urban growth in the Central Valley, AFT recommends a consensus-building process that would occur simultaneously in all communities and on a valley-wide basis under the leadership of the private sector and state and local officials. The critical features of such a consensus-building process might include the following:

American Farmland Trust recommends a consensus-building process to lay the groundwork for effective action to achieve more compact, efficient growth.

- An officially sanctioned task force, commission or similar process to lay the groundwork for further effective action to achieve more compact, efficient growth. This effort should include representatives of all major private and public interests, including but not limited to agriculture and other businesses such as home-building, taxpayers, environmental advocates and public officials. It should be adequately funded and professionally staffed. And it should be charged with the responsibility of reaching consensus on —

- A shared vision for reconciling agriculture, urban development and environmental resources in the Central Valley.

- Measurable objectives designed to result in compact, efficient urban growth patterns that will fulfill that vision.

- Definitive steps that each stakeholder interest group can take to achieve those measurable objectives.

■ Simultaneously, local task forces or commissions with a similar charge should be convened in each Central Valley city and/or county to provide local perspective and input to the valley-wide consensus-building process.

What Citizens Can Do

True consensus on how Central Valley communities should grow will emerge only if those who live and farm there get involved. If the people lead, the leaders will follow. AFT urges all citizens who have a stake in the Central Valley to take an active part in the public dialogue on their future.

*If the people lead,
the leaders will
follow.*

- Keep informed about growth, its impact on you and your community, and what can be done to manage it.
- Contribute your time and talents to organizations that are involved in the dialogue on growth.
- Contact your city, county and state government representatives and urge them to take decisive steps to encourage compact, efficient growth that protects America's most important agricultural resource ... and your pocketbook.

Endnotes

1 Acreage figure compiled from California Department of Water Resources, *California Water Plan Update, Bulletin No. 160-93*, and California Department of Conservation, Farmland Mapping and Monitoring Program. This study encompasses 11 Central Valley counties: Sutter, Yolo, Sacramento, San Joaquin, Stanislaus, Madera, Merced, Fresno, Tulare, Kings and Kern. These counties meet two conditions that others do not: A large portion of their area is Valley floor farmland, and they face a significant amount of urban growth pressure. All figures in this report, including agricultural production, refer only to these 11 counties.

2 Based on Farmland Mapping and Monitoring Program data and AFT estimates for unmapped areas of the Central Valley.

3 A detailed explanation of the methodology and findings of the computer mapping study is contained in B. Muller and T. Bradshaw, *Central Valley Alternative Growth Futures: Options for Preserving California's Agricultural Capacity* (1995), one of two technical papers summarized in this report. The details of the economic impact analysis are contained in D. Strong, *Economic Analysis of Low Density v. Compact Urban Growth: 11 County Central Valley Study* (1995). Both are available upon request from American Farmland Trust.

4 Though the computer draws maps of probable growth patterns with some precision, it is important to note that its output identifies only the *type* of land likely to be developed, i.e., its proximity to highways and employment, location within LAFCO spheres of influence, etc. The fate of individual farms and ranches depends not only on external market forces, but also on the wishes and circumstances of individual landowners -- which obviously cannot be programmed into a computer. Thus, landowners should not point to the maps and wonder why the property they "never intend to develop" is shown as being urbanized.

5 See, D. Strong, *Economic and City and County Fiscal Impact With and Without Urbanization of the Southeast Fresno Area* (1995).

6 "Prime farmland" is defined by the Farmland Mapping and Monitoring Program of the California Department of Conservation as: "Land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the [approximately two-year period] prior to the mapping date." "Farmland of Statewide Importance" is defined by FMMP as: "Land similar to prime farmland but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. [It too must have been used to produce irrigated crops.]"

7 See tables in the Appendix at the end of this summary report for a county-by-county projection of farmland development and economic impacts.

8 All economic impact figures in this report are expressed in 1993 dollars.

9 Farm income is included in agricultural sales and should not be double-counted.

10 This study focuses primarily on the service costs and revenues of Central Valley *cities*. The cost of many services provided by California cities, like police and fire protection, and public works such as streets, water and sewer systems, varies significantly with the density of the development served. By contrast, the density of development generally does not make a significant difference in most *county* costs because of the nature of the services they provide, including courts, libraries, health and welfare services. The cost of education, usually the most expensive public service, is borne by independent school districts in California. We made the conservative assumption that educational costs do not vary with development density, even though other studies show that they can and do. See, e.g., American Farmland Trust, *Density Related Public Costs* (1986).

Appendix

**Table 6
Projected Acreage and Percentage Loss of Farmland By Class -- Year 2040**

County	Urban Sprawl				Compact Growth			
	Prime & Important		Other Farmland		Prime & Important		Other Farmland	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Fresno	163,615	18.8*	70,585	25.0*	68,426	7.0*	36,752	13.3*
Kern	72,422	7.4	109,835	2.6	28,521	2.9	53,485	1.3
Kings	20,307	3.4	4,716	1.7	8,367	1.4	2,926	1.1
Madera	20,777	11.0	23,301	2.0	5,045	2.7	8,181	0.7
Merced	38,858	8.6	16,540	2.1	16,090	3.6	8,657	1.1
Sacramento	60,767	30.3	106,136	36.0	24,468	12.2	50,549	17.1
San Joaquin	81,111	15.1	32,377	10.3	37,255	7.0	13,863	4.4
Stanislaus	62,315	21.0*	18,201	21.0*	36,561	12.0*	11,533	13.0*
Sutter	23,969	8.4	3,057	3.2	10,586	3.7	1,569	1.7
Tulare	55,542	7.2	27,166	1.2	22,961	3.0	14,260	0.6
Yolo	13,986	4.8	9,894	2.9	7,657	2.6	6,658	2.0
Total	613,669	12.3	421,808	3.0	265,937	5.3	208,433	1.5

Projections from Muller and Bradshaw (1995)

* The Farmland Mapping and Monitoring Program has not completed mapping of portions of Fresno and Stanislaus Counties. Therefore, estimates have been made of the total Valley floor farmland acreage for purposes of calculating the percentage of expected losses.

**Table 7
Projected Agricultural Land Within Zone of Conflict**

County	Zone of Conflict (Acreage)	
	Urban Sprawl	Compact Growth
Fresno	278,410	222,434
Kern	1,034,693	436,073
Kings	62,554	56,435
Madera	132,624	85,524
Merced	112,610	92,876
Sacramento	122,332	102,007
San Joaquin	211,937	171,247
Stanislaus	146,498	98,223
Sutter	66,683	41,209
Tulare	295,747	209,197
Yolo	73,402	60,645
Total	2,537,490	1,575,870

Zone of conflict assumed to extend 0.3 miles (500 meters) from developed areas.
Projections from Muller and Bradshaw (1995)

Table 8
Loss of Agricultural Sales -- County Summary
 All figures for year 2040 in Millions of 1993 Dollars

	<i>Fresno</i>	<i>Kern</i>	<i>Kings</i>	<i>Madera</i>	<i>Merced</i>	<i>Sacramento</i>	<i>San Joaquin</i>	<i>Stanislaus</i>	<i>Sutter</i>	<i>Tulare</i>	<i>Yolo</i>	<i>Total</i>
Urban Sprawl												
Commodities (Direct)	698	360	37	48	106	138	196	188	57	241	13	2,083
Services (Indirect)	1,074	564	48	80	161	193	296	288	95	364	19	3,183
Total	1,772	924	85	128	267	331	492	476	152	605	32	5,266
Compact Efficient Growth												
Commodities (Direct)	313	162	16	14	60	62	88	112	26	108	8	971
Services (Indirect)	483	254	22	24	85	87	134	173	42	164	11	1,477
Total	796	416	38	38	145	149	222	285	68	272	19	2,448
Difference: Compact Growth Savings												
Commodities (Direct)	385	198	21	34	46	76	108	76	31	133	5	1,112
Services (Indirect)	591	310	26	56	76	106	162	115	53	200	8	1,706
Total	976	508	47	90	122	182	270	191	84	333	13	2,818

Muller and Bradshaw (1995); Strong (1995)

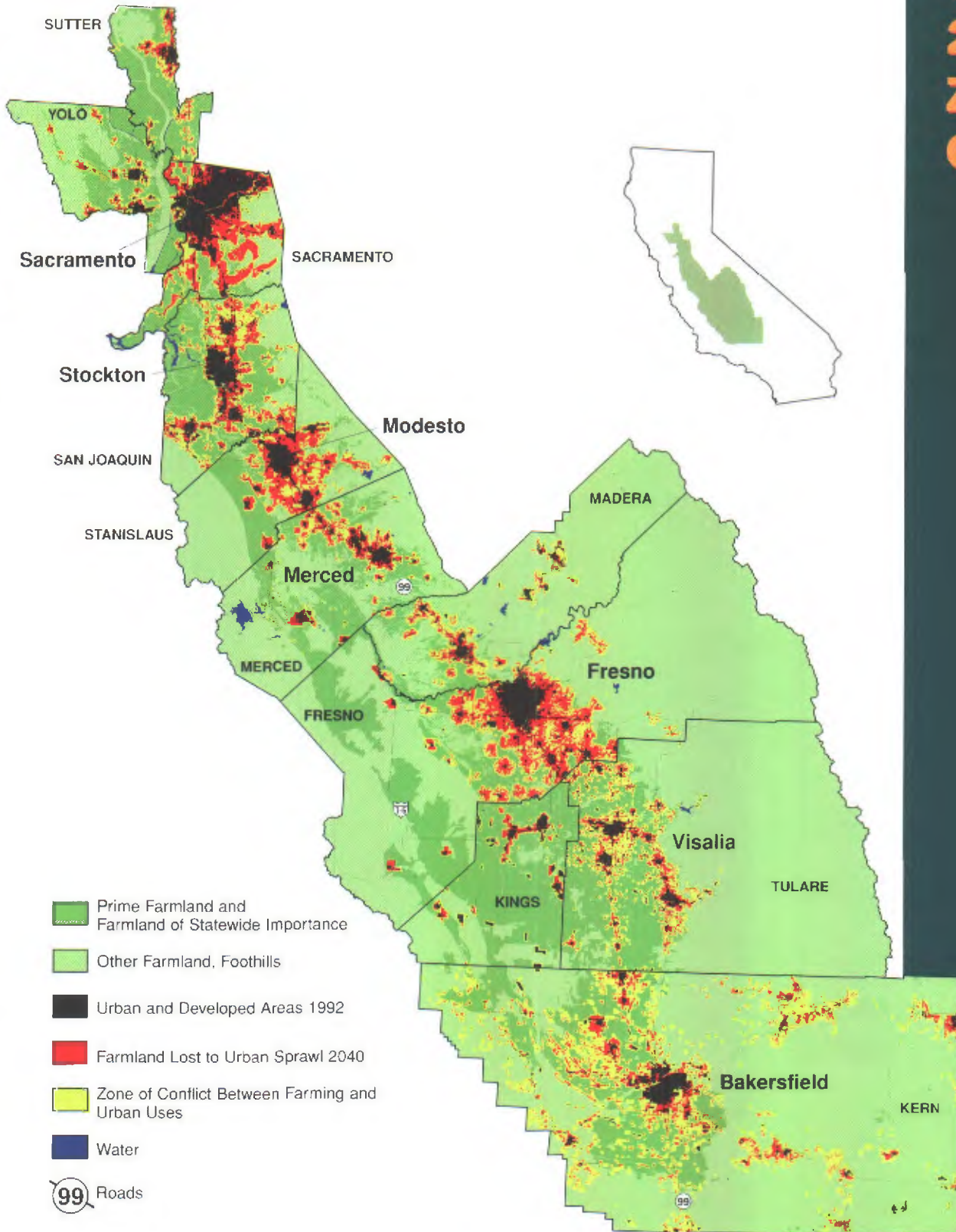
Table 9
City Revenues and Public Service Costs -- County Summary
 All figures for year 2040 in Millions of 1993 Dollars

	<i>Fresno</i>	<i>Kern</i>	<i>Kings</i>	<i>Madera</i>	<i>Merced</i>	<i>Sacramento</i>	<i>San Joaquin</i>	<i>Stanislaus</i>	<i>Sutter</i>	<i>Tulare</i>	<i>Yolo</i>	<i>Total</i>
Urban Sprawl												
City Revenues	1,188	822	85	78	247	955	558	552	124	339	166	5,115
City Service Costs	1,414	905	113	128	286	1,239	640	605	146	421	202	6,100
Surplus/(Deficit)	(226)	(83)	(28)	(50)	(39)	(284)	(82)	(53)	(22)	(82)	(36)	(985)
As Percent of Revenue	-19%	-10%	-33%	-64%	-16%	-30%	-15%	-10%	-18%	-24%	-22%	-19%
Compact Efficient Growth												
City Revenues	1,195	823	86	79	247	958	562	555	125	339	168	5,134
City Service Costs	1,129	720	89	93	229	1,031	519	508	111	329	162	4,917
Surplus/(Deficit)	66	103	(3)	(14)	18	(73)	43	47	14	10	6	217
As Percent of Revenue	6%	13%	-3%	-18%	7%	-8%	8%	8%	11%	3%	4%	4%
Difference (Compact v. Sprawl)												
City Revenues	(7)	(1)	(1)	(1)	0	(3)	(4)	(3)	(1)	0	(2)	(19)
City Service Costs	285	185	24	35	57	208	121	97	35	92	40	1,183
Net Savings	278	184	23	34	57	205	117	94	34	92	38	1,164
As Percent of Revenue	25%	23%	29%	46%	23%	22%	22%	18%	29%	27%	25%	23%

Muller and Bradshaw (1995), Strong (1995)

California's Central Valley

Urban Sprawl 2040 Zone of Conflict



Base Map from California Department of Conservation Farmland Mapping and Monitoring Program Data
Population Projections from California Department of Finance
GIS by University of California/Institute of Urban & Regional Development
Produced by American Farmland Trust, 1995



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