

By Bruce Abelli-Amen and Eric Parfrey

# Survey of Land Use Conflicts Associated with Vineyards and Pesticide Use

The proliferation of wine grape growing areas in California has provoked a continuing debate about how to resolve land use conflicts between vineyards and their neighbors, particularly residential neighborhoods. The environmental and land use controversies associated with vineyard operations have become the most heated in the world famous wine growing regions of Napa and Sonoma counties, fifty miles north of San Francisco, where both counties have come under pressure to adopt more stringent regulations to control vineyard design and practices. The conflicts between vineyards and urban uses are not just confined to northern California, but are also being experienced in the other major wine growing areas of the state.

In 2001 BASELINE Environmental Consulting, an Emeryville-based firm, completed a survey of city and county planning agencies and county agricultural commissioners in California's wine growing areas to learn more about the extent and types of land use conflicts. The survey results indicate that the most serious conflict is related to use of pesticides by wine grape growers. The second issue most frequently cited by survey respondents is typical land use conflicts that occur when new developments (usually new homes) are constructed adjacent to agricultural operations. The survey documents other land use conflicts associated with soil erosion caused by vineyards, and impacts of new vineyard construction on adjacent, existing non-agricultural uses, such as rural homes.

The survey asked local planners and agricultural commissioners to answer several basic questions, such as "Is there a widespread problem associated with the vineyard-urban interface? What are the planning tools available to public agencies to address vineyard pesticide use and urban encroachment? Which are the most effective tools?" These are the types of questions planners, agricultural commissioners, and consultants have been increasingly asked as urban growth pushes into already established grape growing areas, or as new vineyards are planted adjacent to existing residential neighborhoods. The purpose of this research was to further define the scope of the problems associated with the vineyard-urban interface in California, the types of mitigation that have proven to be most effective, and to provide a context for making these sometimes difficult planning decisions.

## Background on the Survey

The survey took the form of a four-page questionnaire consisting of 13 short answer or multiple choice questions. The survey was sent to municipal and county planning departments and county agricultural commissioners in early 2001. The survey was sent to the 28 California counties that have more than 1,000 acres

of wine grapes under cultivation (Figure 1). In addition, the survey was sent to 29 city planning agencies within the 28 counties.

Approximately one-half (47 percent) of the surveys that were sent out were completed and returned (40 surveys out of 85) (Table 1). Responses were received from either the county planning agency, the agricultural commissioner, or one of the city planning departments, for 23 of the 28 counties that were targeted (82 percent). The survey was completed by 15 county planning departments, 14 agricultural commissioners, and 11 city planning departments.

## Survey Results

### *The Scope of the Problem*

The first question of the survey was: "Are rural/urban conflicts involving vineyards occurring in your county or city?" A majority (56 percent) of the respondents indicated that conflicts with vineyards are occurring within their jurisdictions. Land use conflicts with vineyards are reported more frequently in those counties with large acreages of wine grapes under cultivation. Eight of the top ten wine producing counties reported conflicts, while just four of the ten counties with the least amount of acreage planted reported conflicts. However, based on the data presented in Table 2, it is clear that rural/urban conflicts are occurring across the board – in counties with high and low populations, in both primarily agricultural and primarily urbanized counties, and in counties throughout all of the wine-growing areas of the state.

*TABLE 1:*  
**Survey Response Rate by County and City**

County/City	Surveys Sent (number)	Surveys Returned (number)	Response Rate (percent)
County Agricultural Commissioners	28	14	50
County Planning Agencies	28	15	54
City Planning Agencies	29	11	38
<b>Subtotal</b>	<b>85</b>	<b>40</b>	<b>47</b>

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## Pesticide Use

Of the types of land use problems reported, conflicts generated by use of pesticides by growers were among the most frequently cited. Of the 40 responses to the survey, 38 percent indicated that application of pesticides is a serious land use conflict between vineyards and non-agricultural uses.

Pesticides are defined as agents that control a pest, whether it is fungus, weeds, or insects. The overall use of pesticides by California's wine grape growers is decreasing. The State Department of Pesticide Regulation reported a decrease of three million pounds of pesticides applied in vineyards between 1999 and 2000. However, more than 85 percent of the pesticide applied to grapes is sulfur to control powdery mildew and sulfur use is rising. Sulfur is practically non-toxic to humans and wildlife and is allowed in organic grape growing operations.

In California, there is a growing trend and increased public demand for produce, including grapes, that is certified and sold as "organic," or free of pesticides. Growing wine grapes through an organic process requires more time and effort for the grower. In general, the yield (grapes harvested per acre) is much lower than that of conventional vineyards, leading to higher prices for the grapes to offset the lower yields. Additionally, the wines tend to be unstable and short-lived, making retail prices higher for organic wines.

The issue of wine growers applying pesticides to control pests has become even more contentious because of the spread of the glassy-winged sharpshooter, an insect that transmits Pierce's disease, which kills grapevines. The glassy-winged sharpshooter has already devastated much of southern California's Temecula wine appellation, and the insect has moved eastward into Riverside County's Coachella Valley, and north into several counties in the Central Valley. The most effective way to control the infestation of the sharpshooter is through aerial spraying of pesticides.

In Sonoma County, the public sentiment against pesticide spraying is the strongest in the state. In October 2000, the Sonoma County Board of Supervisors unanimously rejected a proposal submitted by the county agricultural commissioner that would have authorized pesticide spraying - with or without a landowner's consent - on properties infested by the deadly vine pest.

## Other Land Use Conflicts

Another frequently cited land use conflict reported by the survey occurs when new development - usually homes - are introduced in an area adjacent to existing vineyards. This practice often places homeowners with little knowledge of, or experience with, agricultural practices in proximity to vineyard operations. Farm practices that generate noise, dust, and odors are often considered an intolerable nuisance to nearby residents who are not familiar with the agricultural lifestyle. These conflicts may not be readily apparent since many potential nuisance-causing farm practices are conducted only on an occasional or seasonal basis. When an interested homebuyer is inspecting a property for purchase and by chance there is no activity at a nearby vineyard, the farm may seem a bucolic amenity to the neighborhood. However, upon occupation of the house on a continuous basis, the new homeowner may become surprised and increasingly frustrated when he is subjected to farm activities such as pesticide application that were not foreseen.

The survey reported several other conflicts associated with vineyard operations, including soil erosion and impacts of

Table 2  
Response to Question "Are rural/urban conflicts involving vineyards occurring?"

Rank <sup>1</sup>	County/City	Agricultural Commissioner's Office	County City Planning Agency	Planning Agency
1	San Joaquin County: Stockton	No response	Yes	Yes
2	Fresno County	Yes	No response	
3	Madera County	No response	Yes	
4	Sonoma County: Santa Rosa Windsor	Yes	Yes	No Yes
5	Napa County: St Helena Yountville	No response	No response	Yes Yes
6	Monterey County: King City	No response	Yes	No
7	Kern County	No response	No	
8	San Luis Obispo County: Paso Robles	Yes	No response	
9	Sacramento County	No	No	
10	Mendocino County: Ukiah	Yes	Yes	Yes
11	Santa Barbara County	Yes	No response	
12	Tulare County	No response	Yes	
13	Yolo County	No	No response	
14	Lake County	Yes	Yes	
15	Amador County	Yes	No	
16	San Benito County	No response	No	
17	Alameda County: Livermore	No response	No	No
18	Glenn County	No	No	
19	San Bernardino County	No	No response	
20	Contra Costa County: Brentwood	Yes	Unknown <sup>2</sup>	No
21	Colusa County	No	No response	
22	Santa Clara County: Gilroy	No response	No response	No
23	El Dorado County	No response	Yes	

<sup>1</sup> Respondents ranked according to amount of vineyard acreage planted.

<sup>2</sup> County planning department indicates "unknown" - refer to response from agricultural commissioner.

developing new vineyards adjacent to existing non-agricultural uses. Noise, dust, odors, hours of operation, trespass problems, and bird control practices were some specific nuisance conditions and/or conflicts cited in the responses.

Grape growers use mulch and plant cover crops to stop erosion in new vineyards, and many vineyards have permanent cover crops to reduce both dust and erosion. In Sonoma County, development of new vineyards on erodible slopes became a very contentious issue in the 1990s. An ordinance adopted by the County Board of Supervisors in 2000 requires growers to submit erosion control plans for all new vineyards that exceed 10 percent slope on highly erodible soils or exceed 15 percent slope on all other soils.

## Planning Tools to Address Conflicts

The survey asked: "Does your county general plan or zoning ordinance include specific policies and/or regulations pertaining to

the rural/urban interface (e.g., setbacks, physical barriers, restrictions on types of uses). One half of the respondents indicated that policies and/or regulations were in-place addressing these issues, with most policies included in the general plan only.

Several respondents submitted excerpts of policies addressing rural/urban interface conflicts. Virtually all of the general plan policies and programs use buffer areas or setback requirements to mitigate land use conflicts between vineyards and adjacent uses. Policies from the general plans of Alameda, El Dorado, Lake, Madera, and Sacramento counties are summarized below.

Policies from the five county general plans require the establishment of buffers, setbacks, or "transitional zones" between existing agricultural uses, such as vineyards, and newly introduced non-agricultural or non-compatible uses. The buffer is required on the parcel of the new use that is to receive the permit. The size of the buffer is specified in two of the county general plans. El Dorado County requires that "agriculturally incompatible uses adjacent to agriculturally zoned lands" shall provide a minimum setback of 200 feet. The Sacramento County General Plan states that "Buffers shall generally consist of a physical separation of 300 - 500 feet wide," although narrower buffers may be approved depending on natural features, specific plan policies, or relative intensities of proposed urban uses.

The Alameda County General Plan buffer policy states that the size and design of buffers "shall be determined based on the characteristics of the project site and the intensity of the adjacent agricultural uses, and if applicable, the anticipated timing of future urbanization of adjacent agricultural land where such agricultural land is included in a phased growth plan." Buffers "may take the form of precluding incompatible uses within a certain distance of agricultural operations, erecting physical barriers to nuisances such as berms or foliage, or mitigation of impacts to non-agricultural uses (e.g., noise insulation). Buffers may consist of a topographic feature, a substantial tree stand, watercourse, or similar feature."

The buffer policies for the other two counties (Lake and Madera) are less specific. The Lake County General Plan states that "non-agricultural development should be separated from agricultural lands by buffers or transitional areas sufficient to mitigate potential land use conflicts." The Madera County General Plan requires "development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses."

#### **Basis of Policies**

The survey attempted to determine how these policies and regulations were developed by asking: "What factors influenced the development of these policies and/or ordinances?" The choices offered included public input, scientific research, policies/regulations of another jurisdiction, or professional judgment of staff or other interest group.

Based on the responses, public input and staff judgment were the most important factors that determined the content of the regulations. Scientific research was among the least important factors cited in development of these policies, although the agricultural commissioners assigned a greater role to scientific research than did the county and city planners.

This response is consistent with the findings of a recently published report on agricultural buffers in (*Can City and Farm Coexist? The Agricultural Buffer Experience in California*, Great Valley Center, Modesto, 2002). The report found that:

A setback distance of 200 feet was frequently cited within the policies reviewed, but there is no hard evidence that 200 feet is the optimal distance, or that it even works. The marked variation in setback distances

from one jurisdiction to another suggests that the distances selected by various counties have been arbitrarily selected and that there is a need for better efficacy data. Until more information is available, the setback discussion would be best served by considering the unique mix of topography, weather patterns, commodity and uses at the particular site.

#### **Effectiveness of Buffer Policies**

City and county planners and agricultural commissioners are often required to act as mediators in conflict resolution and therefore may be in a good position to evaluate the effectiveness of the existing policies and regulations as tools in resolving conflicts. In an effort to determine the perceived effectiveness of the existing policies and regulations, the survey asked: "In your judgment, how effective have your general plan policies and/or zoning regulations been in addressing rural/urban interface issues relative to vineyards?" The majority of respondents indicated that the existing policies are "somewhat effective." Only one respondent indicated that they were "not at all effective."

#### **Lead Agencies and Public Health Complaints**

The survey asked: "Which county agency is primarily responsible for resolving rural/urban interface conflicts associated with pesticide use (check all that apply)?" The choices provided were: 1) the county agricultural commissioner, 2) the county health department, and 3) county planning department. The respondents overwhelmingly indicated that the agricultural commissioner was the lead in resolving these conflicts. Based on the responses, the county health department appears to play the least important role in conflict resolution associated with vineyard pesticide use.

A question on the survey inquired about complaints related to vineyards and pesticide use. A majority of respondents indicated that the frequency of complaints related to vineyard pesticide use was "never" or "a few times a year" (Table 4). Almost one-half of the respondents (19 of 40) said they received complaints "a few times a year," while 17 respondents said they never receive complaints. Only four respondents, including three agricultural commissioners and a county planner, indicated that they received complaints on a "monthly" or "weekly" basis.

#### **Conclusions**

Ongoing suburban growth and vineyard expansion are creating more and more conflicts as these differing land uses come closer together. More than one-third of the agencies contacted reported conflicts and/or complaints about vineyard-related pesticide use near the urban interface. Most of the agencies that have implemented measures to address the conflicts (primarily setbacks and buffers) report that these measures are only somewhat effective. Nearly one-half of the responding agencies

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Effectiveness	County Agricultural Commissioners	County Planners	City Planners
	Affirmative Responses		
Very	1	1	2
Somewhat	4	7	4
Not very	1	4	0
Not at all	1	0	0

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continue to receive complaints.

Based on the responses received to this survey, it does not appear that any of the agencies involved with planning and mediation of vineyard-urban interface conflicts have developed an effective policy to resolve these conflicts. It is clear that the existing requirements for setbacks and buffers, which were not based on scientific research, are not completely effective.

As the demand for new housing and wine grapes continues to expand, vineyard-urban interface conflicts will likely become more and more frequent. Two strategies could form the basis for resolving the land use conflicts. Agriculturalists and nearby homeowners could find new ways to coexist by accepting the inconveniences associated with sharing the same agricultural area. Or, local agencies could more rigorously analyze and design buffer

and setback requirements between homes and vineyards, to more effectively mitigate noise, dust, odor, and pesticide drift. Perhaps well designed buffers could reduce the frequency and magnitude of conflicts and complaints to the point where an occasional reminder of an area's rural heritage could be taken with a smile.

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Table 4

## Frequency of Complaints Received by Agency Staff

Public Health	County Agricultural Commissioners		County Planners		City Planners	
	Affirmative Response	Percent Responding	Affirmative Response	Percent Responding	Affirmative Response	Percent Responding
Never	5	36	7	47	5	45
Few times/year	6	43	7	47	6	55
Monthly	1	7	0	0	0	0
Weekly	2	14	1	7	0	0

## Professionals on the Move

**Peter Hersh has joined LSA Associates, Inc. (LSA)** as a Project Manager for the Environmental Planning Division. Mr. Hersh brings 24 years of a diverse public and private sector background to the position. Before joining LSA, Mr. Hersh worked in both the public and private sectors, most recently as the head of his own consulting business, Peter Hersh & Associates, and prior to that as Assistant to the City Manager for the City of Irvine. During an 11-year career at the City, he was responsible for key public policy projects and was also the City's Planning Services Manager. Mr. Hersh's background in policy development, planning, and law complements his environmental and land use planning assignments at LSA.

**Roger Green has joined LSA Associates, Inc. (LSA)** as a Project Manager for the Environmental Planning Division. Mr. Green has over fourteen years of professional planning experience in municipal, environmental, and transportation planning. Before joining LSA, Mr. Green worked in both

the public and private sectors representing clients in the planning and development services industry. He began his career at the City of Irvine and subsequently was employed as a consultant providing municipal services to clients throughout Southern California. He recently served as the Community Development Director for the City of Laguna Woods.

**Natalie Macris** recently opened a new office in San Francisco. In her work as an urban and environmental planning consultant, Ms. Macris specializes in writing and editing planning documents of all kinds, including environmental impact reports and other CEQA documents. She is the author of *Planning in Plain English: Writing Tips for Urban and Environmental Planners* published by the American Planning Association. She can be reached at 1620 Montgomery Street, Suite 330, San Francisco, California 94111; by phone at (415) 837-5948; or by e-mail at nmacris@planningediting.com.