

STONEBRIDGE

— STRATEGIC SOLUTIONS FOR THE WINE INDUSTRY —

The Economic Impact of Napa County's Wine and Grapes

Prepared for Napa Valley Vintners

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A STONEBRIDGE RESEARCH REPORT

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HIGHLIGHTS

FULL 2011 ECONOMIC IMPACT OF WINE PRODUCED IN NAPA COUNTY

\$13.3 billion in Napa County

\$25.9 billion Total California

\$50.3 billion Total US

	NAPA COUNTY	TOTAL CALIFORNIA	TOTAL US
Number of Licensed Napa Wineries, 2011+	789		
Winery Wholesale Revenue, 2011 (plus exports)	\$3.7 billion		
Winery Direct Sales, 2011	\$744.7 million		
Cases of Napa Appellation Wine Produced 2011	8,401,300		
Total Retail Value of Napa Appellation Wine sold 3-Tier, 2011	\$12.1 million	\$1.2 billion	\$4.7 billion
Total Cases of Wine Produced in Napa County	49.7 million		
Total Retail Value of All Napa County Wine sold 3 Tier, 2011	\$16.3 million	\$2.1 billion	\$9.3 billion
Number of Vineyards	1600*	N.A.**	
Vineyard Acreage	43,581	125,267	
Grape Crop Size (Tons)	121,872	718,178	
Value of Grape Crop/Vineyard Revenue	\$423,441,900	\$765,578,185	
Full-time Equivalent Jobs	46,000	102,000	303,000
Wages Paid	\$2.1 billion	\$4.7 billion	\$9.2 billion
Wine Related Tourism Expenditures	\$1.05 billion		
Annual Number of Winery Visits	3.8 million		
State & Local Taxes Paid	\$661 million	\$1.2 billion	\$2.5 billion
Federal Taxes Paid	\$621 million	\$1.3 billion	\$2.7 billion
Charitable Contributions	\$84 million		

Source: Stonebridge Research, Washington NASS, US Bureau of Labor Statistics and Industry Interviews. *Total vineyard permits. Not all are commercial growers. ** We did not attempt the estimate the number of non-Napa vineyards growing grapes for non-appellation wine processed in Napa. + Winery number from TTB permit list.

Executive Summary

Not only is Napa County home to a major share of California's wine heritage as well as many of its most admired wines, the county also accounts for a significant share of California's wine industry.

In 2011, Napa County, including both Napa Valley appellation wines and wines produced in Napa County¹ from grapes from other regions, produced about 20% of all the wines produced in California and between 16% and 17.5%² of all the wine produced in the United States, according to data provided by the Alcohol and Tobacco Tax and Trade Bureau of the US Treasury Department.

Sales of wine produced in the county account for 52% of the total retail value of all the California wine sold in 2011 and 26.6% of the volume of all such wines.

This scale of wine activities in the county is reflected in its economic impact. In 2011 Napa's wine industry had a total economic impact of more than **\$13 billion** on Napa County's economy, **\$26 billion** on the California economy, and **\$50 billion** on the American economy, as detailed in Table 7 below.

This second update of the economic impact of Napa County wine and grapes is distinguished from the previous studies by:

- The inclusion of estimates for all the wine produced in Napa County, not just Napa Valley appellation wines, thanks to the generous cooperation of some of Napa's major producers.
- More thorough consideration of the suppliers and service providers to the industry, as discussed below.

A Note on the Data

Each time we do these studies we need to stress that there is hardly any public or standardized data on this complex industry. The State of California Department of Forestry and Agriculture, through its division of the National Agricultural Statistics services (NASS), provides substantial and detailed data on grape production, acreage, and sales, down to the district level -- and fortunately Napa is a single district. Wine sales *volumes* can be deduced from Federal and state excise tax data, although such data is not available for entities below the state level. National and state level wine production numbers and wine sales volume indicators (wine removed from bond) are published by the TTB and county level detail can be obtained on request. Winery numbers can be obtained from both state (California ABC) and Federal sources (TTB) -but these numbers seldom agree, due to timing differences in permit approvals and cancellations and different license categories at state and federal level.

¹ For this report, wine produced in Napa County includes wine blended, bottled or grown within Napa County.

² Napa county wines accounted for 17.5% of all wines bottled in the US in 2011 and 16.1% of all wines fermented in the US in 2011, according to TTB data. TTB defines "production" as fermenting, with bottling as a separate activity. Napa County bottles somewhat more wine than it ferments, as some large producers centralize their bottling activities from adjacent regions in the county.

No region can provide specific vineyard counts, as vineyards are often held in multiple parcels for private tax reasons. Employment and wage data by county is available for certain industry categories from the US Department of Labor Bureau of Labor Statistics. Fortunately, wineries and vineyards are specific categories for such data -- but most supplier industries and services (e.g. cooperages, bottles, closures, capsules, tanks for wine, wine laboratories) are buried in broader categories such as “glass containers” or “wood processing.” Moreover, even for specified categories, these data only cover employees eligible for unemployment insurance, thus excluding owner-operators, contract and part-time workers. Revenue data is not available from any published source.

Thus, these studies depend on diligent primary research: multiple industry interviews combined with searches of multiple sources for pieces of information that can be assembled to substantiate an estimate. To provide a metric for the effort, we tracked employment, revenues, and wages for approximately 72 industry activities for this study, with about 200 phone calls, emails, and meetings in addition to more conventional data and document searches. Much of this process is explained below but please understand that these findings are best available estimates.

Wine Produced in Napa County

Many of the wineries established in Napa County prior to 1990, including some of the major wineries in the US, traditionally produced wine from grapes grown in the Napa Valley (wine entitled to carry the Napa Valley appellation and the various Napa Valley sub-appellations) as well as from grapes grown in *other* regions of California, making all of their wines, in all price ranges, within the county. The passage of the Winery Definition Ordinance (WDO) in 1990 required wines produced in wineries developed after that date to have at least 75% Napa grapes. The WDO is considered a cornerstone protection of Napa’s Agricultural Preserve and the agricultural character of the county.

The scale achieved by these major producers, along with the quality reputation of Napa Valley wines, attracted many suppliers and service providers to Napa County, including bottling, processing, and storage facilities in the southern part of Napa County. This cluster of industry expertise attracted still further vintners, winegrowers, and service providers to the county, making Napa a key center of the California wine industry.

The Alcohol and Tobacco Tax and Trade Bureau (TTB) provided, in response to a special request by the Napa Valley Vintners, the following data on total volume of wine produced and bottled in Napa County for 2010 and 2011 and the total volume of tax-paid wine removed from bond in Napa County for the same periods. Tax-paid wine removed from bond is a reasonable indicator of wine sales by Napa producers (although it excludes exports, which are not subject to excise tax.)

Table 1: Estimated Total Napa County Wine Produced and Sold, 2010 and 2011

	2010 (case equiv.)	2011 (case equiv.)
Total Wine Bottled	47,403,049	49,699,359
Total Wine Removed from Bond	52,143,889	53,574,387

Source: TTB

In both 2010 and 2011, wine removed from bond exceeded estimated production, most likely because wine was sold out of inventories, which had grown as sales of more expensive wine fell with the onset of the recession in late 2008 through 2009.

Based on these data, and further data published by TTB on California and US wine produced and bottled, we have estimated that **Napa County wines account for one in five bottles of wine produced in California** while Napa Valley appellation wines account for 3% of such wines. The TTB does not track wine production by AVA. Production volumes for Napa Valley wines have been estimated from grape production data and industry interviews.

Table 1: Napa County Wine Produced as Share of US and California Wine Produced

	Cases (million)	% of US Wine	% of CA wine
Total US Wine Bottled, 2011	283.5	100.0%	
Total California Wine Bottled, 2011	248.1	87.5%	100.0%
Total Napa County Wine Bottled, 2011	49.7	17.5%	20.0%
Napa Valley Appellation Wine Bottled, 2011	8.4	3.0%	3.4%

Source: Stonebridge Research, industry interviews, TTB, California NASS

The total retail value of all the wine produced³ in Napa County, including sales through the 3 tier system as well as direct to consumer and export sales, is estimated to have totaled \$10.1 billion in 2011, with the retail value of Napa Valley appellation wines estimated at \$5.5 billion, or 55% of the value of county's wine sold while only 15.6% of the volume of the county's wines.

Table 2: Wine Revenue by Distribution Channel

	TOTAL US
NAPA COUNTY WINERY REVENUE FROM TRADE/3 TIER SALES	\$3,748,083,363
DIRECT TO CONSUMER SALES	\$744,572,250
EXPORTS	\$84,145,796
TOTAL NAPA COUNTY WINERY REVENUE	\$4,576,801,409
TOTAL US DISTRIBUTOR MARGIN	\$1,027,803,085
TOTAL US RETAILER & RESTAURANT MARGIN	\$4,563,318,216
TOTAL US RETAIL VALUE OF ALL WINE PRODUCED IN NAPA COUNTY (EXCLUDES EXPORTS)	\$10,083,776,914

³ Given the complexity of the processing arrangements for (especially) non-appellation wines in the county, we use TTB's totals for wine bottled in 2011 as the indicator for total wine production.

	TOTAL US
TOTAL US RETAIL VALUE OF NAPA VALLEY APPELLATION WINES	\$5,465,248,973

Source: Wine Institute, Stonebridge Research, Industry Interviews, NASS, TTB, California State Board of Equalization

The Wine Institute estimates that California wine accounted for 61% of the volume (and value) of the wine sold in the US in 2011, estimating total California wine sales volume at 211.9 million cases and the total value of sales of California wine at \$19.9 billion.

Table 3: Napa Wine's Share of US and California Wine Sales

		% of All Wine Sold in US	% of CA Wine Sold in US
Total Sales of Wine in US, Cases, 2011	347 million	100.0%	
Retail Value of Total Sales of Wine in US, 2011	\$32.5 billion	100.0%	
Total California Wine Sold in US, Cases, 2011	211.9 million	61.1%	100.0%
Retail Value of Total California Wine Sold in US, 2011	\$19.9 billion	61.2%	100.0%
Total Napa County Wine Sold in US, Cases, 2011	53.3 million	15.4%	25.3%
Retail Value of Total Napa County Wine Sold in US, 2011	\$10.1 billion	31.1%	50.8%
Napa Valley Appellation Wine Sold in US, Cases, 2011	8.4 million	2.4%	4.0%
Retail Value of Napa Valley Appellation Wine Sold in US, 2011	\$5.4 billion	16.6%	27.1%

Source: Wine Institute, TTB, Stonebridge Research, NASS

Thus, as shown in Tables 2 and 3 above, **wine produced in Napa County**, representing 17.5% of the all wine produced in the US, accounted for 31% of the value of all the wine sold in the US in 2011, or about **one out of every three dollars spent on wine sold in the US. Napa Valley appellation wine alone accounts for almost 17% of the value of all sales of wine in the US, from only 3% of total US wine production.**

The retail value of wine produced in Napa County accounts for **50.8%** of the *value* of all California wine sold in the US in 2011. Napa Valley appellation wines, representing many of the highest value wines produced in California, alone represent **27%** of the total value of all California wine sold.

Consumer Direct Sales

The California State Board of Equalization (BOE), which collects California State sales and use tax, as well as fuel, alcohol, and tobacco taxes and fees, has now started reporting sales tax collection by type of industry collecting the tax. Responding to a special request for this study, the BOE was able to provide sales tax collections directly by wineries and the totals for related taxable transactions. Sales taxes are collected on taxable retail sales and thus these amounts can be reasonably assumed to reflect total retail sales by wineries, principally wines sold directly to consumers, picked up at the wineries or shipped within the state of California.

Industry interviews allow us to estimate the share of such taxable transactions in total consumer direct sales and thus the total consumer direct sales for wineries in Napa County. On this basis, total consumer direct sales for wineries in Napa County are estimated to total \$745 million.

Assuming that Napa Valley appellation wines represent the greater share of consumer direct sales, as consumers seldom buy direct from a winery those wines which they can easily purchase at their local retailers⁴, consumer direct represents more than 30% of sales revenue from 15.4% of case volume for this segment of production. Since Napa Valley appellation wines tend to be the highest value wines produced in the county, consumer direct is estimated to represent nearly 17% of total winery revenue in the county, from only 2.4% of total county case production⁵.

The BOE data indicates that retail sales by wineries in Napa County represent **38%** of all retail sales by wineries in the State of California.

Table 4: Sales Tax Taxable Transactions by Wineries (NAICS code 312130)

Region	Taxable Transactions
Napa County	\$330,921,000
State of California	\$868,364,000

Source: California State Board of Equalization

Employment

Wineries employ full and part-time workers as labor for bottling, storage, maintenance, and winemaking needs as well as hospitality, finance, sales, and marketing functions. Some wineries also employ seasonal labor, for both harvesting and hospitality. Vineyard employment-vineyard management, contract labor and self managed. A very high proportion of Napa's vineyard labor are locally-based, full time employees. Supplier employment is more complex, as discussed below.

Napa Valley grapes, Napa County wine and their allied industries, directly and indirectly, provided full-time equivalent jobs for more than **46,000** individuals in Napa County, for total of nearly **102,000** individuals

⁴ Most of the non-appellation wines produced at Napa's larger wineries do have such national retail distribution.

⁵ This large share of revenue relative to production results from the concentration of direct sales in the higher value appellation wines. Few consumers would ship wines which are generally available at their local retailers, as are most of the non-appellation wines produced by the county's larger wineries.

across the state of California and for about **303,000**⁶ workers across the US. The Napa wine and grape industry, with related activities, accounts for more than two-thirds of all the full time jobs reported in the county in May 2012.

Table 5: Employment Impact of Wine Produced in Napa County

SECTOR	NAPA COUNTY (FTE)	TOTAL CALIFORNIA (FTE)	TOTAL US (FTE)
WINERIES	8,398	8,398	8,398
DISTRIBUTORS	200	905	3,606
3 TIER RETAIL & RESTAURANT	74	12,758	129,779
VINEYARD	3,537	6,237	6,237
SUPPLIERS	1,636	3,323	3,586
PROFESSIONAL SERVICES, EDUCATION & ASSOCIATION	433	837	1,000
TOTAL DIRECT JOBS	14,278	32,458	152,606
TOURISM INCLUDING RESTAURANT	8,760	8,760	8,760
INDIRECT (IMPLAN)	11,365	29,250	55,469
INDUCED (IMPLAN)	11,716	31,125	86,366
TOTAL	46,119	101,593	303,201

Source: Stonebridge Research, US Bureau of Labor Statistics and industry interviews

Tourism

We estimate the total number of visits⁷ to wineries at 3.8 million in 2011, based on interviews with a large cross section of wineries in each of the major sub-regions of the county as well as the winery benchmarking studies we have conducted over several years. The interviews included wineries open to visitors, appointment-only wineries and wineries not open to the public. Wineries have quite varied methods of tracking their visitor numbers -- paid tastings, glasses used, CRM or POS entries, etc. -- and some are still developing their visitor tracking methods.

⁶ We know that wineries employ numerous personnel, particularly in sales, across the US, including in other regions of California, but were not able to include a reliable estimate for such labor in this study.

⁷ Note also that the number of visits is not the same as the total number of visitors to the county, as visitors often visit more than one winery.

We then use all the information collected to estimate visitor numbers for each of the licensed wineries in the county, double checking our estimates with multiple wineries. In these estimates as in all estimates developed from interviews for this study, we always take the low end of a possible range of values to ensure that estimates are conservative as well as realistic.

The total number of visits to Napa Valley wineries has recovered to somewhat above its pre-recession levels, based on interviews with a large cross section of Napa Valley's wineries, although visits seem concentrated among wineries with stronger followings and brands.

Our next step was to determine the wine tourism related *spending and employment* in the county. This proved difficult this year, given the limitations of the data available on overall tourism patterns for the county and state. The Purdue University study of Napa Tourism, commissioned by the Napa Convention and Visitors Bureau in 2005, included a broad consumer intercept which allowed them to estimate that more than 77% of Napa Valley visitors visited at least one winery. We feared that this study was outdated. Finding comparable current data proved challenging.

In past years, annual studies commissioned and published by the state travel organization (formerly California Travel and Tourism, CTTC, now called Visit California) provided estimates total visitors, and total tourism employment and spending by county. However, due to budget cutbacks, Visit California's latest studies cover only 2009 and do not provide total visitor estimates by county, although it does estimate county tourism spending and employment. Visit California staff suggested using a metric of \$400 spending per visitor to estimate visitor numbers. Unfortunately, this number of visitors thus derived (dividing estimated total tourism spending by \$400) suggests a much smaller number of visitors than other data (TOT collections, etc.) would suggest. Moreover, the \$400 per visitor estimate seems quite high, given the large share of day trips by Napa Valley's visitors.

To resolve these issues conservatively, Stonebridge reverted to Purdue's 2005 estimate of 77% of Napa Valley visitors visiting wineries plus the 2009 Visit California estimate⁸ for total tourism-related employment and spending in Napa in order to develop estimates for the total spending and employment in the county attributable to winery visits. We realize these are not perfect numbers but the best that can be obtained given the information available.

The overall impact of Napa Valley winery visits on tourism would benefit from still further investigation. Visit Napa Valley, the Napa tourism agency, is working on visitor count estimates, although these may only be based on hotel stays, leaving questions about day visitor numbers still unanswered. Other questions merit examination. For example, San Francisco continues to estimate that 23% of its visitors visit "wine country." However, there is no data as yet to assess the extent to which "wine country," and specifically Napa Valley, as a world recognized destination, also brings visitors to San Francisco. Hopefully, future research planned by Visit Napa Valley will consider these issues.

⁸ The Visit California study used national metrics developed by the US Bureau of Economic Analysis to determine the employment breakdown by sector. However, this metric does not really fit Napa County. For example, the metric assumes more employment in the "recreation" sector than the California State Department of Employment Development reports existing in Napa. It also is not clear where wineries belong in this sector breakdown.

Suppliers and Service Providers

Each iteration of this study allows more opportunities to deepen and expand the analysis of suppliers and service providers to the industry. Since the enterprises involved in the industry are either privately owned or services to the wine industry are just one of several lines of business for the enterprises, there is little if any public information available. Individual interviews with a combination of suppliers, vintners, growers and industry advisors are required to assemble the relevant data. Since the information collected is often proprietary, we have aggregated the data presented into broad categories. We are most grateful for the cooperation and patience of so many of the respondents.

The research indicates some interesting trends among suppliers and service providers:

- An increasing proportion of the finishing work for both barrels and corks is conducted locally, primarily in Napa, although most of the raw materials for both are imported.
- Purchase of new oak barrels has declined considerably, by 30% to 50%, with increasingly sophisticated use of barrel alternatives and growth of stainless steel fermentation.
- Glass bottles for Napa County's wines are largely produced within California. We had previously assumed that much of this production occurred in various other regions of the US. Imports are a relatively small share of the bottles used for Napa County wine out of concerns about consistent quality. To some extent, Chinese imports are taking some market share from bottles produced in Mexico.
- Much of the equipment used in wine production is quite specialized and much of this equipment is produced in Europe. Sales representatives and distributors for these imports tend to be based in Napa Valley, and serve the rest of the US winemaking industry from Napa Valley. Other highly skilled wine related activities, such as laboratory testing, serve the rest of the country from a Napa Valley home.
- Napa County suppliers tend to be distributors, retailers and service providers. The manufactured products used by wineries and vineyards are more likely to be manufactured elsewhere, often neighboring counties, for which Napa County provides much of the market.
- However, Napa County is home to most of the high-value added cork and barrel finishing, and much of the label production for the industry. Construction, custom metal work, and similar activities for Napa wineries are also more likely to originate in Napa but stainless steel tank construction has largely shifted to neighboring counties.
- The inclusion of the large volume of non-appellation wine produced in Napa County highlighted the degree to which wineries have outsourced wine-related freight and storage to independent companies. From grape hauling, bulk wine, and case goods shipment to bulk wine, barrel, and case goods storage, highly specialized warehousing and freight services are major activities in the industry and in Napa County's economy. Many of the freight companies in particular are small, local entrepreneurial firms.

- Many of the vineyard workers in Napa Valley today, whether working for wineries, vineyards, or vineyard managers, appear to be full time, and long term, employees, often receiving full employee benefits.

Public Revenues

From grape to consumer, the wine and wine grape industry generates significant tax dollars, benefiting federal, state and local governments. Tax dollars are raised through sales taxes, excise taxes, income taxes, estate and gift taxes, payroll taxes, property taxes, and other business taxes and fees, including permits and licenses of various types.

Activities in Napa County related to wine produced in Napa County generated nearly **\$1.3 billion**⁹ in total public revenues in 2011, including more than **\$660 million in state and local taxes**¹⁰ and other public revenues and more than \$621 million in Federal revenues. Activities within California related to wine produced in Napa County generated nearly \$2.4 billion in public revenues at the state, local, and federal levels. Across the US, these activities generated nearly \$5.2 billion in public revenues at all levels.

In addition to Napa County’s share of various general state and local tax revenues, Napa County directly received more than \$50 million in taxes and assessments from wineries and growers and related industries in 2011.

The Napa County Assessor estimates that: “the wine industry, including vineyards, wineries, warehousing, corks and capsules, coopers etc., represents approximately 12-18% of the county’s assessed value or \$3.25 billion to \$4.86 billion in assessed value. That assessed value would generate between approximately \$35.4 billion and \$52.9 million in annual property taxes.” We assume a midpoint in these amounts in the table below.

Table 6: Estimated Impact of All Wine Produced in Napa County on Government Revenues in 2011

	Generated by Napa County wine and grape related activities	Generated by all the activities in CA relating to Napa produced wine	Generated by all the US activities relating to Napa produced wine
PROPERTY TAX	\$44,000,000	\$44,000,000	\$44,000,000

⁹ All the tax estimates in this table, except for the county specific estimates, excise and winery direct sales taxes, were produced by the IMPLAN model, explained on page 15 below, based on the employment data provided by Stonebridge.

¹⁰ Included in this total are \$866 million in California state and local indirect taxes, as calculated by the IMPLAN model. IMPLAN includes in this total of state and local indirect business taxes: \$379 million in sales and use taxes, \$413.4 million in business property taxes, \$8.6 million in motor vehicle taxes, and \$38.3 million in severance tax, 'other' and non-taxes (e.g. fees etc.). Some of these taxes (e.g. property, some parts of sales taxes) are collected at the local government level. The latest revenue update for the California budget identifies \$18.8 billion in sales tax collections, and \$6.1 billion in “other and insurance taxes”, for a total of nearly \$25 billion. Thus, the total for state level 'indirect business' taxes attributed to Napa wine is about 1.5% of total state level indirect business taxes.

	Generated by Napa County wine and grape related activities	Generated by all the activities in CA relating to Napa produced wine	Generated by all the US activities relating to Napa produced wine
GROWER ASSESSMENTS*	\$1,124,870	\$1,124,870	\$1,124,870
WINERY DIRECT SALES TAX**	\$4,963,815	\$4,963,815	\$4,963,815
TOTAL NAPA SPECIFIC TAXES	\$50,088,685	\$50,088,685	\$50,088,685
OTHER STATE AND LOCAL TAXES			
WINERY DIRECT SALES TAX	\$20,682,563	\$20,682,563	\$20,682,563
EXCISE TAX	\$5,397,674	\$5,397,674	\$110,027,366
EMPLOYEE COMPENSATION	\$11,010,695	\$19,916,008	\$25,499,710
INDIRECT BUSINESS TAXES	\$462,673,572	\$866,085,313	\$1,896,727,908
HOUSEHOLD TAX	\$92,606,587	\$202,425,010	\$296,934,552
CORPORATE TAX	\$17,672,285	\$46,377,591	\$72,791,279
TOTAL	\$610,043,376	\$1,160,884,159	\$2,422,663,377
FEDERAL TAX			
EXCISE TAX***	\$1,116,534	\$42,615,800	\$144,492,015
COMPENSATION RELATED	\$269,690,736	\$539,589,188	\$1,196,756,928
INDIRECT BUSINESS TAX	\$119,628,916	\$142,007,018	\$290,679,076
HOUSEHOLD (INCOME) TAX	\$165,943,456	\$364,065,504	\$716,182,592
CORPORATE TAX	\$64,943,456	\$169,558,368	\$397,034,560
TOTAL	\$621,323,098	\$1,257,835,878	\$2,745,145,171
TOTAL TAXES PAID	\$1,281,455,158	\$2,418,720,037	\$5,167,808,548

Source: Stonebridge Research, DISCUS, California Board of Equalization and IMPLAN

*Includes \$8 per acre for Napa Pest Control District, \$10 per acre for Farmworker Housing and \$.75 per \$1,000 of wine grape revenue for Pierce's Disease and Glassy Winged Sharpshooter Eradication ** The county generally receives 1.5 percentage points of the California 7.75% sales tax. *** Wholesalers estimate that .056% of all wine sold 3 tier in CA is Napa wine. This estimate of federal excise tax includes this share of the county's wine sold 3 tier plus the tax paid by wineries on wine sold direct to consumer.

Charitable Contributions

The wine industry is unique in its charitable support to the community. Based on discussions with the industry, charitable contributions in 2011 are estimated at nearly \$84 million in-kind and in-cash, plus substantial donations, generally in-kind (wine for auctions and related travel) or sponsorships, for charities in the rest of the country.

Many wineries do not even track such contributions or differentiate between family and company support. To estimate charitable contributions in 2007, we conducted industry interviews and winery surveys and concluded that the industry's contributions tended to average about 1.7% of winery revenues¹¹. As the recession has deepened, and other sources of funding have declined, industry interviews have indicated that the industry has increased this support of community services. Consequently, we have increased our estimate of such support to about 1.85% of revenues.

We have not attempted to estimate the many charitable donations provided by Napa Valley's wine industry to activities outside the county.

Napa's wine industry has long provided critical support to sustain Napa County's social safety net. Napa Valley's wine industry is particularly notable for the scale of support it provides to education, health, and social services in the county. In 1999, long before neighboring counties even considered such programs, Napa Valley Vintners established the Napa Valley Vintners Community Health Center. The Center houses Clinic Olé, now in its 40th year, which serves low income and uninsured individuals. Additionally, the Napa Valley wine industry taxes itself to provide quality housing for farm workers.

TABLE 7: TOTAL ECONOMIC IMPACT OF NAPA COUNTY'S WINE AND GRAPES, 2011

	IN NAPA COUNTY	TOTAL CALIFORNIA	TOTAL US
REVENUE			
WINERY REVENUE including exports	\$ 3,832,229,158	\$ 3,832,229,158	\$3,832,229,158
WINERY DIRECT SALES	\$ 744,572,250	\$ 744,572,250	\$ 744,572,250
DISTRIBUTOR MARKUP	\$ 1,872,081	\$ 223,133,098	\$1,027,803,085
RETAIL/RESTAURANT MARKUP	\$ 8,474,141	\$ 1,070,102,306	\$4,563,318,216
VINEYARD DEVELOPMENT	\$ 41,017,632	\$ 106,366,188	\$ 106,366,188
WINE GRAPE SALES	\$ 423,441,900	\$ 765,578,185	\$ 765,578,185
TOURISM	\$ 1,054,981,075	\$ 1,054,981,075	\$1,054,981,075
SUPPLIERS	\$ 348,509,109	\$ 1,214,323,270	\$1,205,293,435

¹¹ Many allied industries continue to provide generous community support. Those amounts are included in this estimate.

	IN NAPA COUNTY	TOTAL CALIFORNIA	TOTAL US
PROFESSIONAL SERVICES, EDUCATION & ASSOCIATIONS	\$ 197,562,888	\$ 333,935,869	\$ 370,736,659
CHARITABLE CONTRIBUTIONS	\$ 84,670,826	\$ 84,670,826	\$ 84,670,826
TAX REVENUES – FEDERAL	\$ 621,323,098	\$ 1,257,835,878	\$2,745,145,171
TAX REVENUES – STATE AND LOCAL	\$ 660,132,061	\$ 1,210,972,844	\$2,472,752,062
INDIRECT (IMPLAN)	\$ 1,744,673,203	\$ 4,655,077,068	\$9,992,324,550
INDUCED (IMPLAN)	\$ 1,458,079,228	\$ 4,645,868,672	\$12,110,189,49
TOTAL REVENUE	\$ 11,221,538,650	\$ 21,199,646,687	\$41,075,960,35
WAGES			
WINERIES	\$ 462,251,114	\$ 462,993,749	\$ 462,993,749
DISTRIBUTORS	\$ 16,471,600	\$ 55,783,275	\$ 243,380,576
RETAIL/RESTAURANT	\$ 1,965,859	\$ 243,992,729	\$ 816,958,781
VINEYARD (INCLUDING VINEYARD DEVELOPMENT)	\$ 120,478,349	\$ 177,581,317	\$ 177,581,317
TOURISM	\$ 218,906,523	\$ 218,906,523	\$ 218,906,523
SUPPLIERS	\$ 68,571,397	\$ 211,750,810	\$ 222,551,378
PROFESSIONAL SERVICES, EDUCATION & ASSOCIATION	\$ 28,658,486	\$ 61,015,235	\$ 71,436,779
INDIRECT (IMPLAN)	\$ 661,374,216	\$ 1,681,353,458	\$3,064,738,294
INDUCED (IMPLAN)	\$ 493,405,438	\$ 1,544,567,875	\$3,900,794,160
TOTAL WAGES	\$ 2,072,082,982	\$ 4,657,944,971	\$9,179,341,557
TOTAL IMPACT	\$ 13,293,621,632	\$ 25,857,591,658	\$50,255,301,90

Source: Stonebridge Research, US Bureau of Labor Statistics, California NASS, TTB, CA State Board of Equalization and industry interviews

Methodology

The best way to understand an economic impact analysis is to see it as the answer to the question: what would we lose if this industry disappeared tomorrow? Intuitively, we all know that the answer to that question is far more than the industry's direct sales. It is more than any other element all the jobs and the tax revenues lost; the business for the restaurant where the workers ate lunch and the car dealers who sold them cars; the office supply stores where the companies bought printers and papers, and the sales and business and other taxes paid by all those businesses. An economic impact study is essentially a way to put numbers to those losses.

To produce this assessment, Stonebridge Research Group LLC explored and developed metrics for the multiple components of this very complex industry: from wine grape growing and winemaking to the many allied industries involved in wine production and consumption, grape cultivation and allied industries - distribution, tourism, equipment, and suppliers. Other economic benefits, including tax revenues, financing, charitable contributions and other indirect and induced benefits generated by the wine industry are also summarized.

This report is an update of the 2008 study and is based primarily on 2011 data, although 2010 data was included for some data items where 2011 data was unavailable (primarily tax and some tourism data.)

In some areas, data sources available to us have changed or been somewhat revised. *In certain other areas, we have been able to improve substantially the accuracy of the analysis, such as the supplier impact calculations.* Expanding the scope of wine production to include all wine produced in Napa County, not solely Napa Valley appellation wine, makes it somewhat difficult to compare this report with the previous reports so that readers may assess the progress of the industry. However, this expansion also makes the study far more accurate and relevant; we had been including all winery employment but not capturing all of their output since the many employees may be involved with production of wine from both appellation and non-appellation grapes, depending on their role.

Direct, Indirect and Induced Effects (IMPLAN)

Much like dropping a rock into a pond, the wine industry has ripple effects on the Napa County, California and US economies. Economic impact studies estimate the impact of an industry in a defined geographical area by identifying and measuring specific concrete economic "events." The events tracked in this report are jobs by industry code.

IMPLAN is the acronym for "**IM** impact analysis for **PLAN**ing." **IMPLAN** is a well established and widely used economic model that uses input-output analyses and tables for over 500 industries to estimate regional and industry-specific economic impacts of a specific industry.

Thus, the full economic impact of wine produced in Napa County wine, as shown in Table 6, combines the Napa County wine industry's direct, indirect, and induced economic effects as measured by the application of the IMPLAN model to the employment data presented in Table 4 of this report.

The IMPLAN model and its structure are updated annually to reflect changes in the US economy, in wages, in productivity assumptions, and in regional economic structures. Thus, readers should not try to directly compare the IMPLAN results from the previous reports with the results of this update.

The IMPLAN model and methodology classifies these effects into three categories, as defined below: Direct Effects, Indirect Effects, and Induced Effects.

Direct Effects

Direct effects are economic changes in industries **directly** associated with the product's final demand. Thus, direct effects in this case consider the direct employment and spending of wineries, vineyards, distributors, and immediately allied industries, data on which Stonebridge Research Group LLC collected through primary research.

Indirect Effects

Indirect effects are economic changes - income created through job creation - in industries that supply goods and services to the directly affected industries noted above. Examples of industry effects are purchases of electricity and gasoline by wineries or of janitorial services by wine bottle manufacturers. These may also be defined as "secondary economic exchanges."

Induced Effects

Induced effects are the effects of these new workers spending their new incomes, creating a still further flow of income in their communities and a flow of new jobs and services.

Examples are spending in grocery and retail stores, medical offices, insurance companies, internet providers, and other non-wine related industries by workers in industries allied to the wine industry - such as the spending by the janitor working under contract to the wine industry supplier. These tertiary exchanges induce more jobs and incomes throughout the state and the nation, based on the original economic flows from the Napa County wine industry.

Taxes

The IMPLAN model estimates all non-industry-specific taxes generated at federal, state, and local levels by the jobs produced by the industry in the respective geographical area. Stonebridge added to these estimates industry specific taxes including federal and state alcohol excise taxes, consumer direct sales taxes, and assessments paid by the industry, because these amounts are not included in the IMPLAN results.

Measuring the Full Economic Impact of Napa County Wine and Grape Production

Napa County's wine industry has a "multiplier" effect, extending across a broad network of economic benefits. The revenue derived by the wine industry becomes income for other workers and firms, in Napa County, in California, and across the US, who spend more money on other goods and services.

APPENDIX: COMPARISON WITH 2008 IMPACT REPORT

The 2008 report considered only grapes produced in Napa Valley and wine produced from those grapes (generally, Napa Valley appellation wine) and was based on 2006 data. The 2008 approach was largely dictated by the available data - data on wine in Napa County produced from non-Napa Valley grapes was not available.

This year several of the wineries processing non-Napa Valley grapes kindly cooperated in providing the data needed to allow the study to consider all aspects of Napa County's wine industry. Thus, the 2011 report considers all wine produced/processed/blended and bottled in Napa County-- which actually accounts for the major share of the industry's economic impact.

Some points to note:

The Updating Process for Economic Impact Studies

Each update of these studies provides an opportunity to delve more deeply into the economics and structure of the industry, especially the many allied industries, from cooperages, corks, and closures to transport, warehousing, and construction.

Moreover, many of these industries have changed over the period. For example, the industry has reduced its use of new barrels and increased its use of barrel substitutes while also shifting much of the finishing work for both barrels and corks from overseas suppliers of the raw materials to processing facilities in California. In addition, several suppliers which had been Napa County based have moved at least part of their operations to Sonoma County to reduce costs.

The expanded grape processing volume led to substantial increases in estimates of total supplier and professional services employment, revenue, and wages, as well as tax impacts.

The 2008 report assumed, in the absence of better data, that any wine-related employment found in Napa or for Napa wineries was related to Napa wine as then defined, i.e., Napa Valley appellation wine.

It is clear today that a large share of the related industry employment, wages, and revenues identified in the previous studies is associated with the many millions of cases of wine produced in Napa County from non-Napa grapes.

Winery and Vineyard Employment

For winery and vineyard employment, we based our estimates in both cases on US Department of Labor Bureau of Labor Statistics estimates of employment by statistical category by county. Since these data count only employees eligible for unemployment insurance, i.e., full-time employees, we have adjusted these data to include owner-operators and contract workers.

These data do not differentiate between workers involved in processing Napa Valley grapes and those involved in processing non-Napa Valley grapes and neither do the wineries in which they are employed. The wine produced in Napa County from non-Napa Valley grapes is processed by many of the same wineries which produce Napa Valley appellation wines, generally those wineries whose operating permits predate the 1990 Napa County Winery Definition Ordinance requiring Napa County wineries to use a minimum of 75% Napa County grown grapes.

Thus, winery employment data is comparable to that in the 2008 report, as is tourism data -- and both reflect all winery activities in the county, whatever the grape source.

While some out-of-county contract labor is used for Napa Valley viticulture, most of Napa's vineyard labor today is employed locally. The previous study assumed a larger amount of contract labor, with a larger share from out of county.

Grapes

The new report clearly differentiates between non-Napa-Valley and Napa Valley grapes.

Wine and Grape Value

Wine production estimates for the 2008 report would have been based on 2005 red wine grape production (and 2006 Chardonnay and 2007 Sauvignon Blanc production) while the 2011 report is based on 2008 red wine grape production (and 2009 Chardonnay and 2010 Sauvignon Blanc Production.) The red wine grape crop in 2008 was only 60% of the size that in 2005. The wines made from the 2008 crop also came to market in the much weaker 2011 market. We assume somewhat lower average prices -- about 15% lower -- for 2011 sales, compared with those in 2006, which was near the peak of the pre-recession "bubble".

Thus, the value of wine produced and of grape sales were much reduced in the new report.

Financing Revenues

Total financing revenues of more than \$292 million were estimated in 2008 (for calendar 2006), or about 7% of assessed asset values for wine and vineyard, and related properties in the county. This was probably an overestimate but the best available at the time. This year industry bankers estimated total financing revenues between \$90 million and \$135 million per year, assuming an average yield rate of 4.5%. Credit outstanding has certainly been reduced, along with interest rates but the 2008 estimate for 2006 was clearly an overestimate. We estimate \$135 million in annual financing revenues for 2011 from Napa and non-Napa sources.

Wine Sales in Napa County

The 2008 study assumed one-third of Napa Valley appellation wines sold through the trade were sold within the State of California and 5% of that was sold in Napa County, given the guidance that many of Napa Valley's smaller and mid-size wineries do not have national distribution and thus their sales tended to be California focused.

For 2011, we were finally able to get distributors to estimate wine sales in Napa County, which produced a surprisingly small estimate of .56% of total California sales of these wines, or about one tenth of our previous estimate. Napa is only 1.7% of California's total population. We know that many of the smaller wineries sold a much larger share of their wine both within the county and within the state. Thus, for Napa appellation wines, we assumed a larger proportion of such sales than we assumed for the non-appellation wines, which are more likely to have national distribution.

Replanting and Vineyard Development

The 2008 report covered the 2006 crop year, when non-bearing acres totaled 2948 acres, compared with only 1855 non-bearing acres in 2011, which is reflected in the far higher estimate in the earlier report for vineyard development costs.

Moreover, since 2006, a far larger share of vineyard labor in the county is employed full-time and vineyard managers are more likely using their existing labor force for this work, rather than additional, possibly contract labor. We do however assume a small amount of out-of-county contract labor for vineyard development.

Overall, we assume about 5% of Napa Valley vineyards are replanted each year, at an average cost of \$30,000 per acre and about 4% of non-Napa vineyards replanted each year at an average cost of \$20,000 per acre.

Public Revenues

Some public revenue data was available for the 2011 study that was not available in previous years, particularly sales tax data directly paid by wineries and excise tax collected by the state from specifically California producers.