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Transportation Usage of the Washington Wine Industry

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SFTA Research Reports:
Background and Purpose

The Strategic Freight Transportation Analysis (SFTA) is a six year, $1.8 million comprehensive research and implementation analysis that will provide information (data and direction) for local, state and national investments and decisions designed to achieve the goal of seamless transportation.

The overall SFTA scope includes the following goals and objectives:

- Improving knowledge about freight corridors.
- Assessing the operations of roadways, rail systems, ports and barges – freight choke points.
- Analyze modal cost structures and competitive mode shares.
- Assess potential economic development opportunities.
- Conduct case studies of public/private transportation costs.
- Evaluate the opportunity for public/private partnerships.

The five specific work tasks identified for SFTA are:

- Work Task 1 - Scoping of Full Project
- Work Task 2 - Statewide Origin and Destination Truck Survey
- Work Task 3 - Shortline Railroad Economic Analysis
- Work Task 4 - Strategic Resources Access Road Network (Critical State and Local Integrated Network)
- Work Task 5 - Adaptive Research Management

For additional information about this report or SFTA, please visit **http://sfta.wsu.edu** or contact Eric Jessup or Ken Casavant at the following address:

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DISCLAIMER

PREVIOUS SFTA REPORTS NOW AVAILABLE

1. Casavant, Kenneth L. and Eric L. Jessup. "SFTA Full Scope of Work." SFTA Research Report Number 1. December 2002.

2. Clark, Michael L., Eric L. Jessup and Kenneth L. Casavant. "Freight Truck Origin and Destination Study: Methods, Procedures and Data Dictionary." SFTA Research Report Number 2. December 2002.

3. Casavant, Kenneth L. and Eric L. Jessup. "Value of Modal Competition for Transportation of Washington Fresh Fruits and Vegetables." SFTA Research Report Number 3. December 2002.

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Transportation Usage of the Washington Wine Industry

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Transportation Usage Of The Washington Wine Industry

INTRODUCTION

The Washington wine industry has grown significantly in the past 20 years. From 1981 to the present, the number of wineries has grown from 19 to just over 200 ("Wine Facts"). Similarly, the wine grape acreage in Washington has grown tenfold. With the increase in production there has been an increase in transportation requirements. County Public Works Departments, RTPOs, MPOs and the Washington State Department of Transportation are challenged with the task of understanding and supporting the efficient transportation of wine products within their respective jurisdictions. A central objective of the Strategic Freight Transportation Analysis (SFTA) study is to develop research-based information to help state and local transportation authorities effectively meet this challenge.

This research report begins with a brief overview of the current level and geographic location of grape production and processing activities.

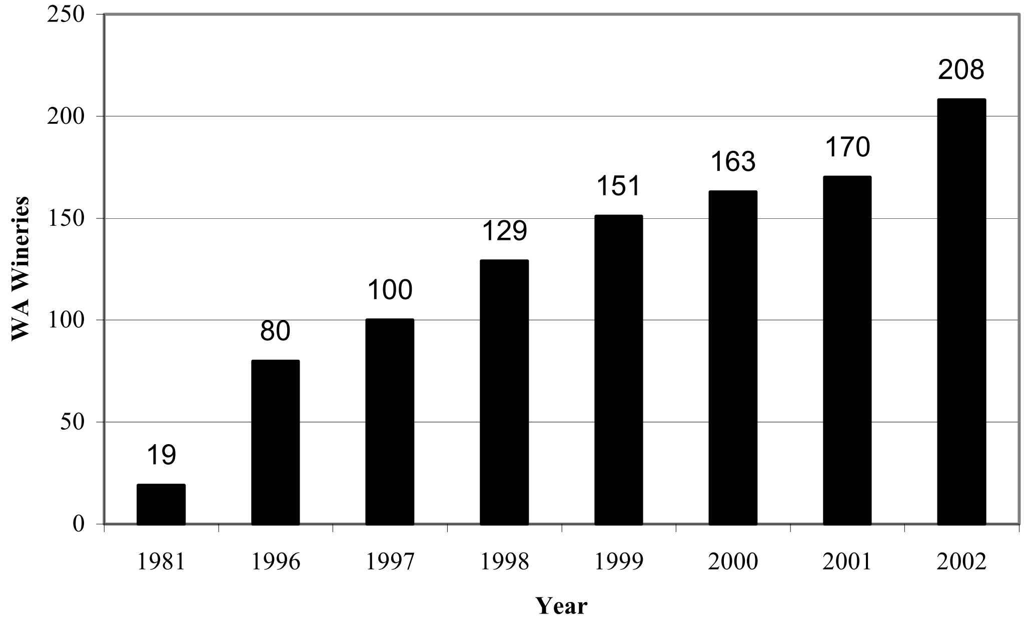
Information for this report was acquired using research reports prepared for the Washington Wine Commission and the Washington Association of Wine Grape Growers and Wines and Vine's Buyers Guide 2002. Additional data were secured through telephone interviews with industry contacts.

WASHINGTON'S WINE INDUSTRY

Washington's wine industry has prospered in the last two decades, placing it second only to California in total production ("Wine Industry"). The wines produced within the state are generally placed in the premium segment with a value of over eight dollars per bottle (Motto). Due to favorable growing conditions and abundant daylight hours Washington grape growers have not only been able to amply supply Washington wineries, but wineries in Canada and throughout the states. In total the Washington wine production and processing segments and affiliated endeavors account for an estimated 2.4 billion dollars to Washington's economy (Motto). Figure 1.1 shows how the number of wineries in Washington has grown in the last 2 decades.

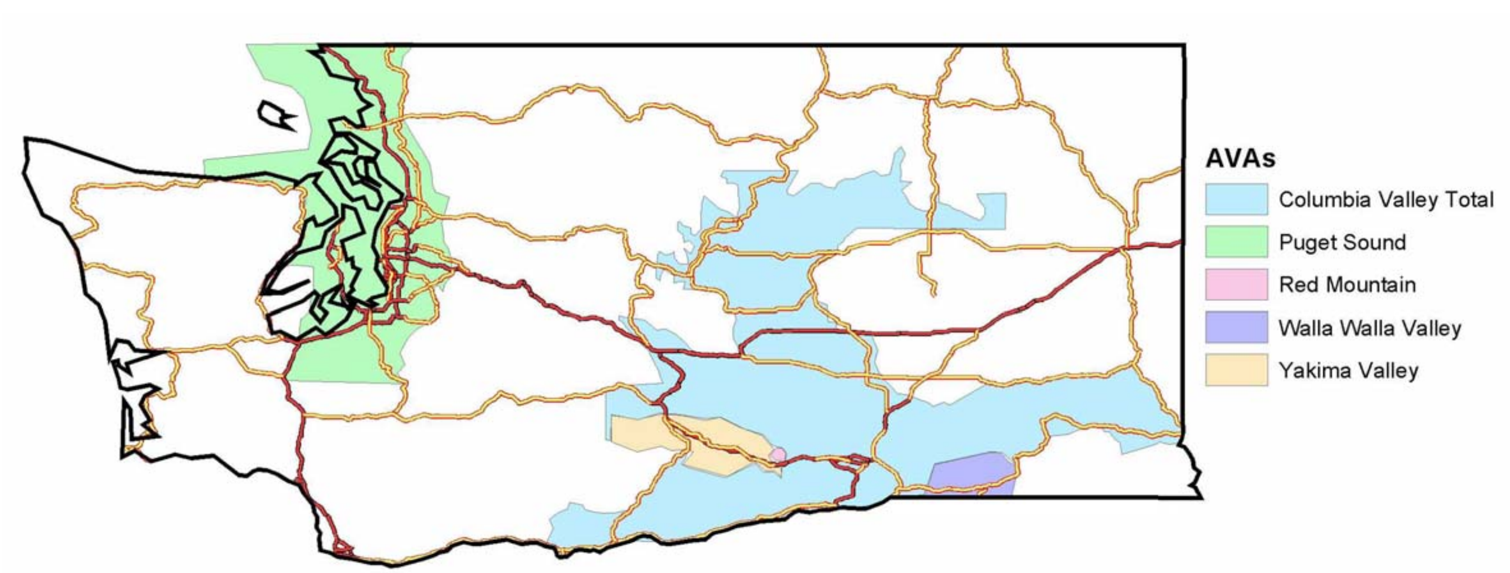
Washington wine grapes are grown predominantly in five American Viticultural Areas (AVAs). AVAs are recognized and defined by the Bureau of Alcohol, Tobacco and Firearms for having unique climates, soils and physical features which distinguish them from surrounding areas. Washington's AVAs are Puget Sound, Yakima Valley, Columbia Valley, Red Mountain and Walla Walla Valley. The Yakima Valley and Columbia Valley AVAs are the most productive, accounting for 94% of the state's total acreage. The large Columbia Valley AVA is further divided into several sub-appellations including Alder Ridge, Canoe Ridge, Cold Creek, Royal Slope, Mattawa, Wallula and Wahluke Slope. The combined bearing acreage of all wine grapes in the state is just under 25,000 acres according to a 2001 survey done by the Washington Agricultural Statistics Service ("Acreage Survey").

Figure 1.1. Growth in WA Wineries



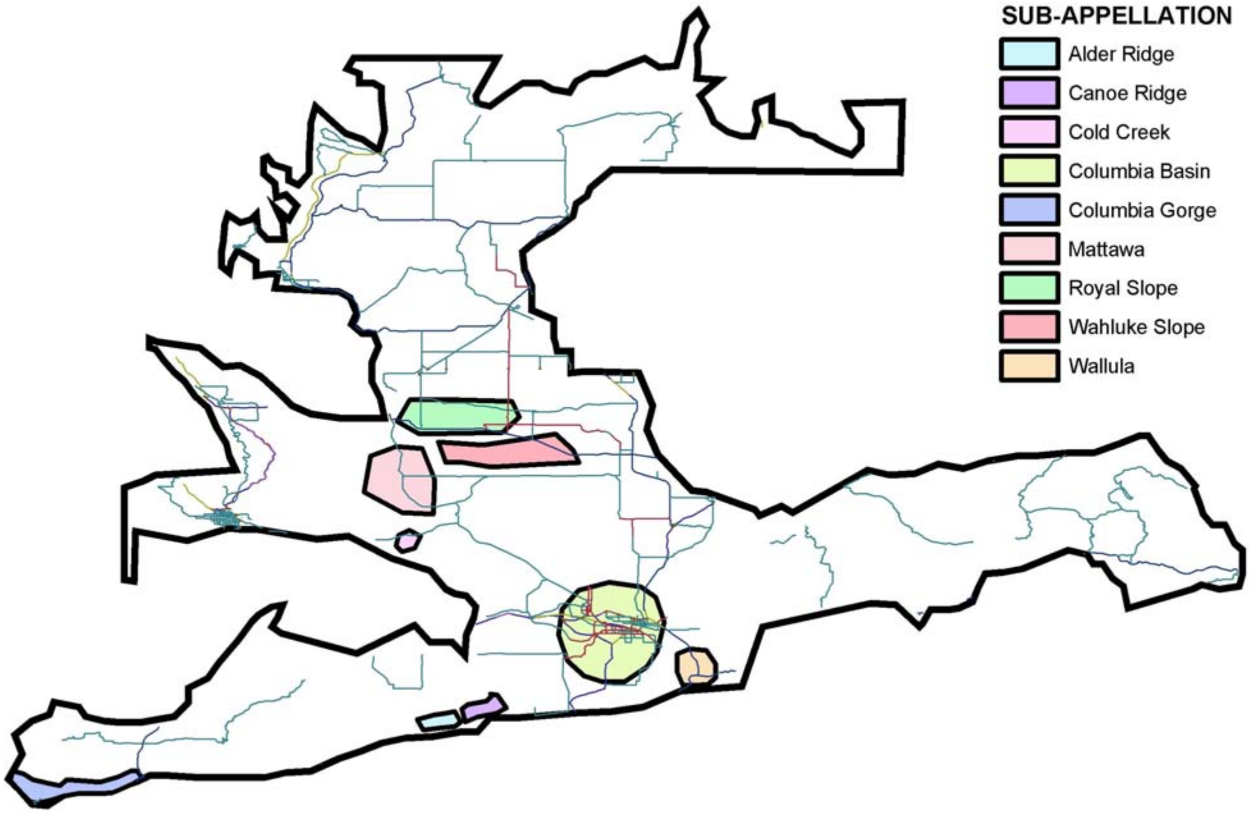
Source: Washington Wine Commission Homepage

Figure 1.2. Location of American Viticultural Areas



Source: Washington Wine Commission Homepage

Figure 1.3. Sub-Appellations Contained in Columbia Valley AVA

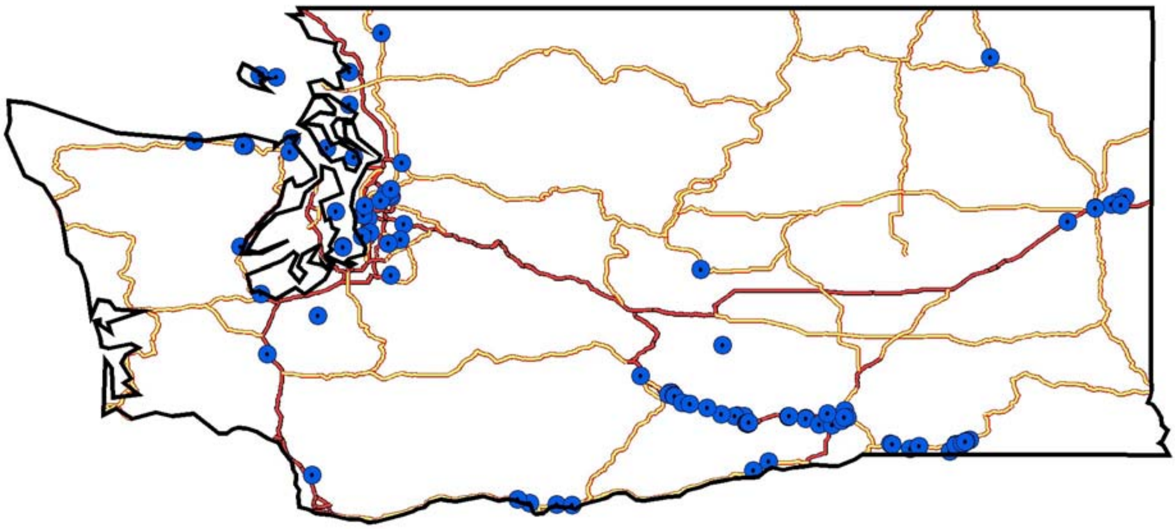


Washington offers a large selection of wine grapes varieties and is constantly evolving to meet changing consumer demands. White wine varieties account for nearly 11,000 of the state's bearing acreage with Chardonnay accounting for over half ("Acreage Survey"). Other white wines of importance include White Riesling, Sauvignon Blanc, and Gewuztraminer.

Red wine varieties account for nearly 14, 000 of the state's 24,800 bearing acreage("Acreage Survey"). The two most dominant varieties are Merlot and Cabernet Sauvignon, with each responsible for over 5,000 acres. Other red varieties of significance are Syrah and Cabernet Franc. For a complete breakdown of which grapes are grown where and the levels of production refer to Tables A.1 and A.2.

Washington wineries are concentrated in to a few identifiable blocks. Those areas of highest production directly correlate to the amount of grapes within the area. The Yakima Valley, the Tri-Cities area and Walla Walla area are responsible for a large majority of the state's production. The Greater Puget Sound area does encompass several wineries, but most are smaller wineries due to the shortage of grapes within the immediate vicinity and the costs associated with moving the raw product. Other than the areas previously mentioned, most wineries are somewhat scattered with slight concentration in the Spokane area and near the Woodinville area. The locations of Washington's wineries are shown in Figure 1.4.

Figure 1.4. Winery Locations



Source: Washington Wine Commission Homepage

When examining the wineries, we see a large amount of concentration with the five largest wineries accounting for 76% of the production. It should also be noted that 4 of the top 7 producing wineries in this state are all owned by the parent company of Stimson-Lane, a subsidiary of United States Tobacco. Figures 1.5 and 1.6 depict winery casegood production and storage. It should be noted that in both maps some wineries that fall into the lowest range are the result of incomplete/unavailable data. Table A.3 gives a fairly complete breakdown of the state's winerys' production capabilities.

Figure 1.5. Annual Casegood Production

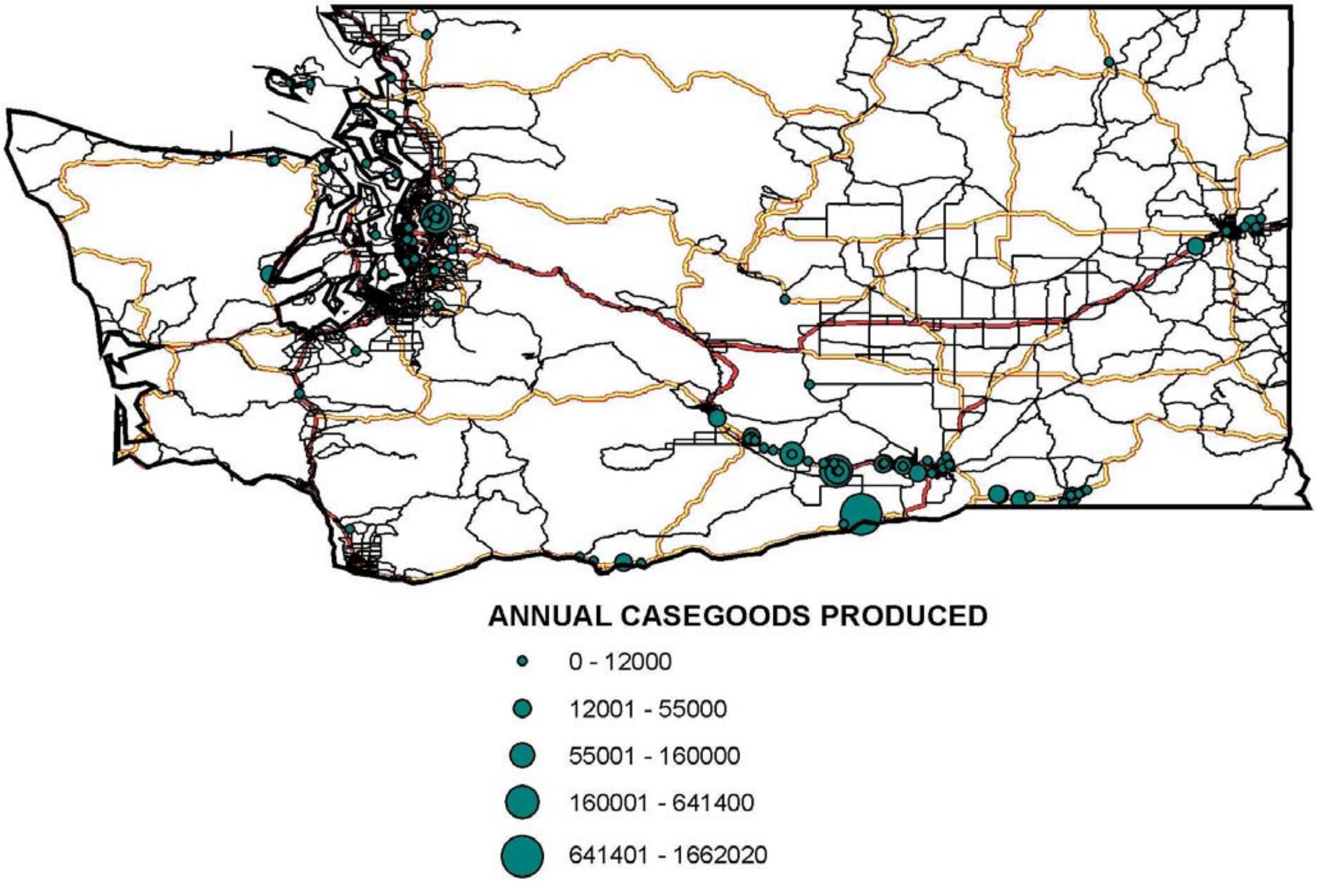
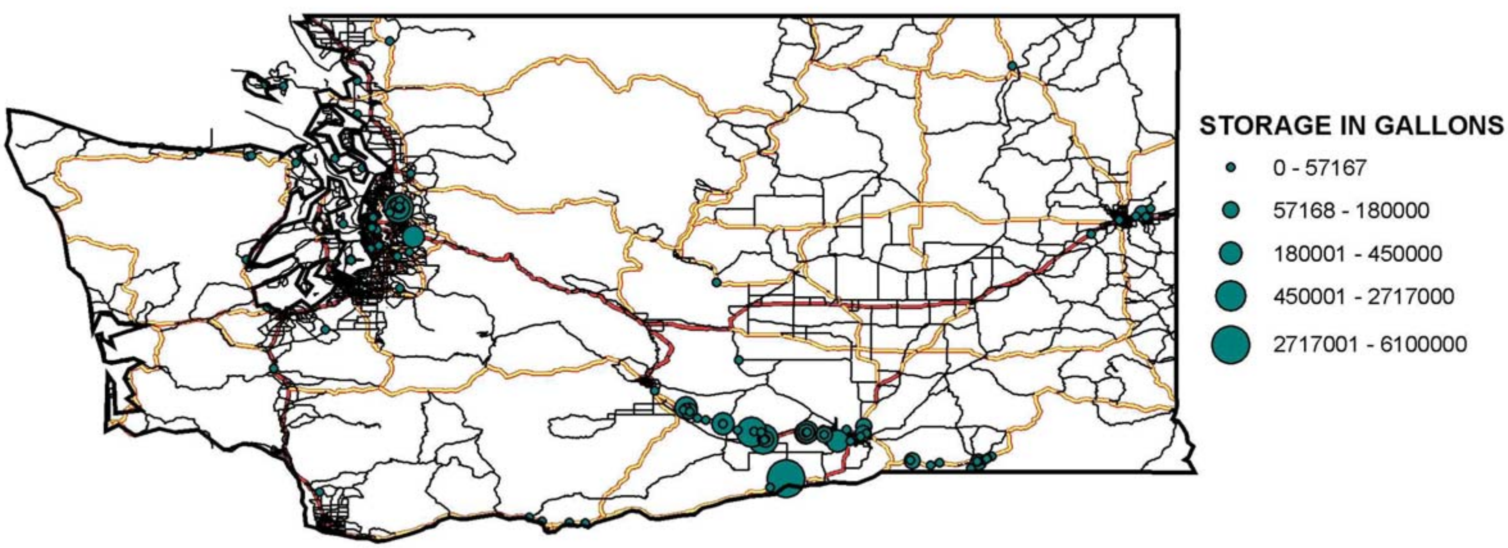


Figure 1.6. Storage Capacity



Sources: Wines and Vine's Buyer's Guide 2002 and Washington Wine Commission Homepage

TRANSPORTATION OF WINE PRODUCTS

When examining the transportation of wine or wine productions there are three separate, identifiable segments that should be examined. These are raw product (grapes) to processor or winery, bulk wine or juice between processors and finished product to markets. It is often times beneficial for wineries to have a separate facility custom press grapes for them. This could be due to the high costs of owning and operating a press or the simple fact that it is more economical to have juice delivered in bulk rather than grapes that take up much more space. Chateau Ste. Michelle, the second largest winery in Washington, is based in Woodinville and has their entire raw product delivered in juice form once it is custom pressed at one of few places. Coventry Vale has two wineries located in Grandview and Mattawa that strictly produce bulk wine to be sold to other wineries. They are responsible for somewhere near 1,000,000 gallons that are currently being processed at Chateau Ste. Michelle. These types of arrangements are proving to be very beneficial to both parties. It allows one company to get the maximum use out of their machinery investments while the other saves significant shipping costs.

Wine grape harvest takes place generally between late August and early November. These dates can be slightly disrupted based on weather during the growing season and grape variety. Consequently this time of year is when wine industry related traffic peaks. During this period trucks carry several tons of grapes to be processed.

A majority of bulk juice should fall into that same time frame, but it is not uncommon for bulk unfinished wine to be shipped throughout the year. These shipments can be between two wineries belonging to the same company for blending purposes, from non bottling processing facilities to wineries needing more product, or from winery to winery to where there is a product shortage or demand for a different variety. It is common for Washington wine to be shipped out of state and even country in bulk for blending purposes due to it's reputation of quality. Bulk wine is also brought into this state, but to a lesser extent.

The final piece of the puzzle is the delivery of finished product. The flow remains somewhat continuous throughout the year sans the holiday season. During the months of November through January there is a sharp spike in consumption. For some varieties the summer months also see a significant increase in consumption.

Using the ArcGIS program the state's wineries have been entered to the nearest major county road, highway or freeway as well as the major grape producing areas. Through this process we are able to determine which routes are most critical in the maintenance of the state's wine industry.

With a quick examination it is quite obvious that I-82 is the most critical route for the wine industry. Not only is it surrounded by the largest number of wineries, it runs through the heart of the largest wine producing regions. Both I-5 and I-90 are also critical in the wine industry. Shipments of grapes and juice west to wineries rely on these routes and consequently these routes prove to be the major corridors to large markets for finished wine products.

SR-221 and SR-14 also generate significant truck traffic because of the two major Stimson-Lane wineries (Columbia Crest and Canoe Ridge Estates) located in close proximity. Also in Benton County, SR-224 generates a modest amount of truck traffic due to the concentration of medium to large sized wineries on arterial streets. These include Terra Blanca, Seth Ryan, Oakwood Cellars, Sandhill Winery, Hedges Cellars, Tapteil Vineyard Winery, and Kiona Vineyards.

Another area of concentration falls around the Woodinville area. Two large wineries (Chateau Ste. Michelle and Columbia Winery) and several others fall near SR-202. The number of wineries in close proximity also impacts I-405 and SR-522. Another route that with significant wine related movement in SR-12 near Walla Walla, with over 25 wineries located on arterial routes. The last routes of major significance are I-182 and SR-395 in the Tri-Cities area. Gordon Brothers, Preston Premium Wines, Claar Cellars, Barnard Griffin, Tagaris Winery and Balcom and Moe Winery all fall in this area. Figures 1.7-1.9 examine which routes are most important in the movement of wine grapes, bulk wine and finished wine.

Figure 1.7. Wine Grape Movements

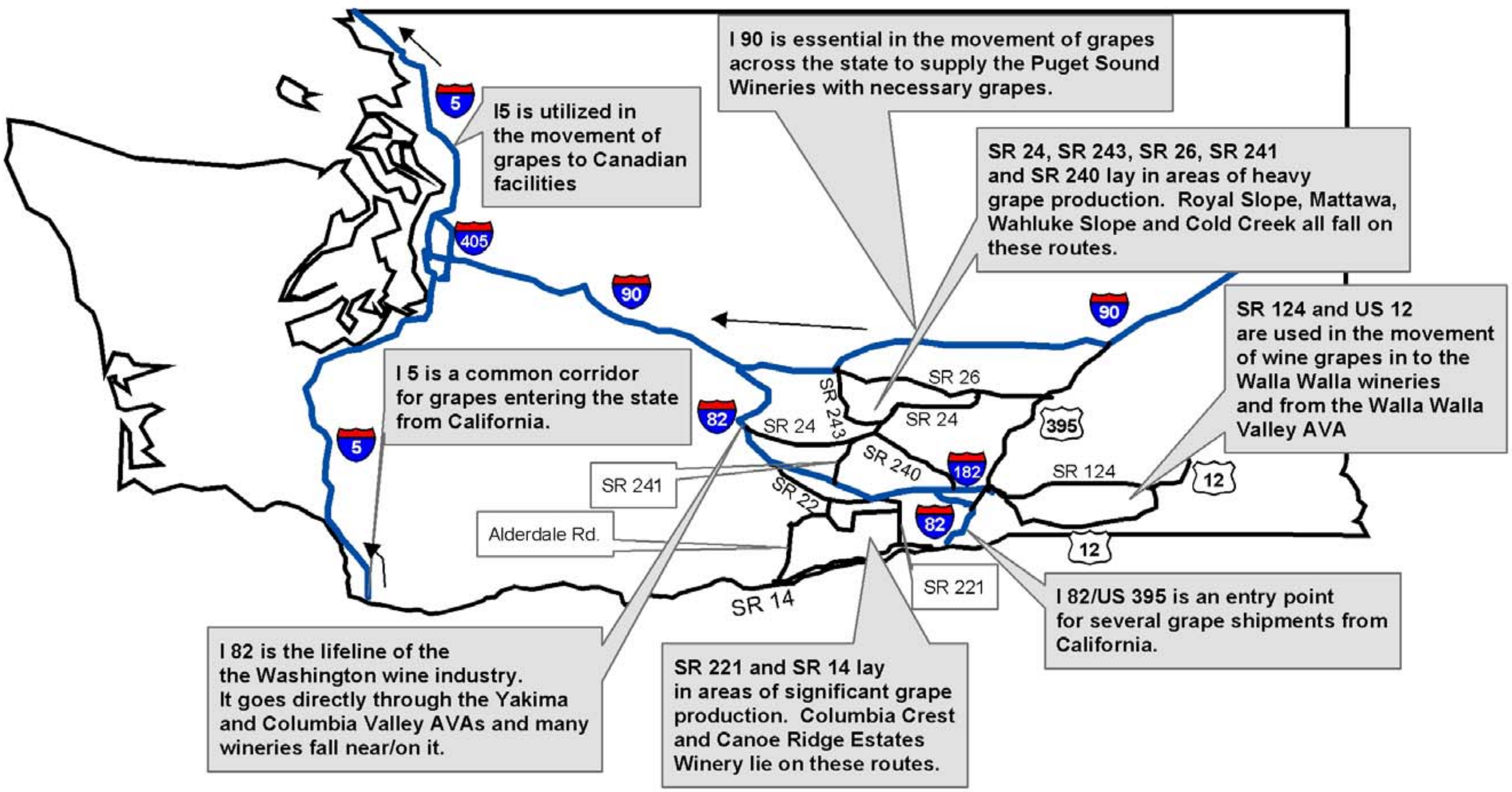


Figure 1.8. Bulk Wine Movements

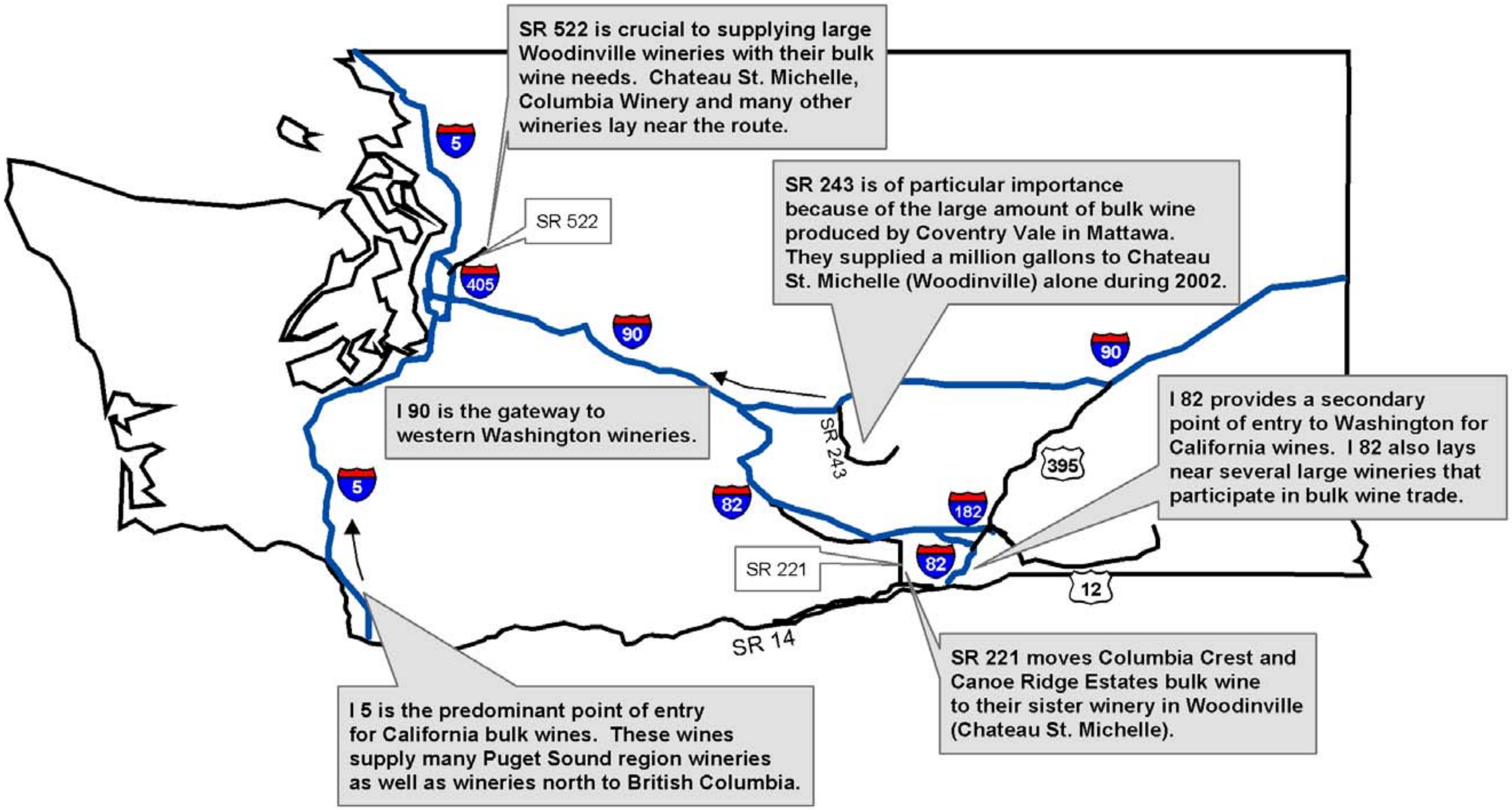
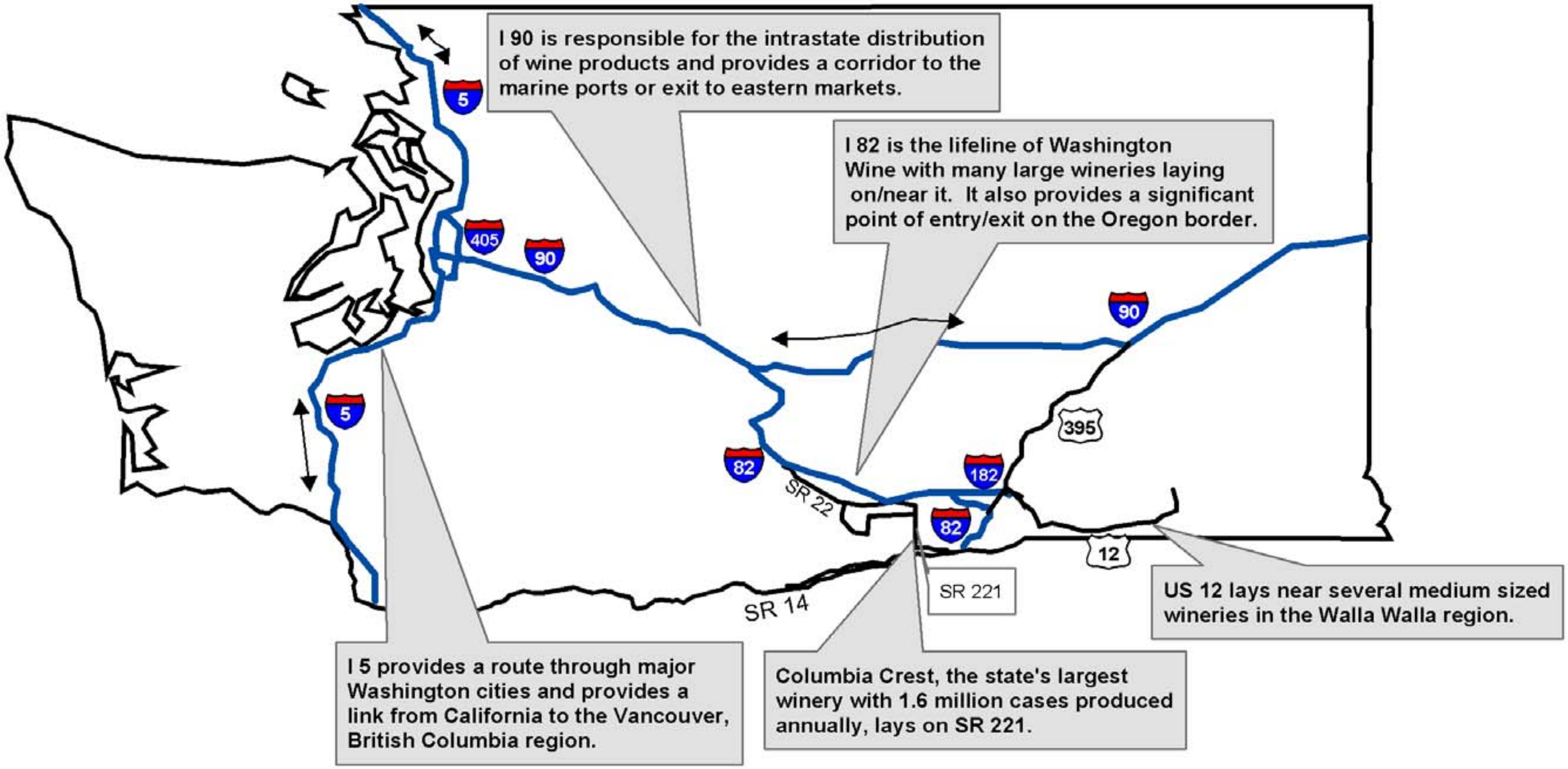


Figure 1.9. Finished Wine Movements



SFTA TRUCK ORIGIN AND DESTINATION SURVEY

The recently completed Origin and Destination Truck Survey provides information on truck movements, characteristics, average truck configurations, axle counts, weights, as well as origin and destination points. Please note that the complete wine data set was less that 40 surveys.

Wine Grape Movements:

The instate movement of grapes typically utilize the tractor and trailer configuration with a van type trailer. Both vans with or without temperature controls were surveyed. Axle counts for grape movements most often displayed three axles on the tractor and two axles on the trailer. The average payload weight is 30,123 pounds.

In the small sample size upon which this information is based, over half of the grapes had Washington origins with most of the remaining shipments coming from California. Nearly all grape shipments were heading westward with many bound for British Columbia destinations. The most common routes were I-90, I-5, SR543 and I-82.

Bulk Wine Movements:

Only shipments in tankers are seen in this group. These tankers have an average empty weight of 31,000 pounds and an average payload weight of 37,200 pounds. A payload range between 30,000 and 50,200 was seen.

In the small survey size, all but one bulk wine shipment had a California origin. Most of the shipments had destinations in British Columbia. The most commonly used routes were I-5 and SR522.

Finished Wine Products:

Shipments carrying finished wine products most commonly utilized van type trailers. Vans both with and without temperature control were accounted for. The average empty weight was 34,161 pounds with an average payload weight of 41,469 pounds. In a sample size of 25 shipments, 17 shipments had Washington origins. Nine of the shipments had Washington destinations with most of the remaining shipments traveling to British Columbia, California and Idaho.

SUMMARY

The wine industry in Washington has grown significantly, in all aspects, in the past several years. The number of wineries has increased from fewer than 20 to over 200. Likewise, the wine grape acreage has climbed from 2,000 to over 24,000. With the high level of growth in the wine industry added stress has been placed upon the transportation system to accommodate increased truck traffic.

Providing further stress to the transportation issue is the concentration of wineries in selected areas. The Columbia Valley, Yakima Valley and Walla Walla Valley are not only the hub of the state's wine grape production, but also the predominant areas of wine production. This leads several key routes to handle the complete burden of the state's wine industry. To further complicate the matter, issues of seasonality cause roads to see the most truck traffic during the three to four month grape harvest. All of these issues need to be taken in to consideration when making transportation decisions.

Movements affiliated with the wine industry can be broken down into three distinct categories; grapes to processing facilities, bulk wine and juice between processing facilities and finished product from wineries. While each category presents unique traffic flows, heavy overlap of routes does exist.

Continued growth in the wine industry will not completely reshape the transportation requirements, but rather cause additional traffic over existing routes. Although past expansion has opened up new areas to the wine industry, it is more likely that future growth presents concentration over expansion. Areas already producing wine will see new wineries being built and expansion of existing wineries over time.

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APPENDIX

Table A.1. AVA Characteristics

Variety	Puget Sound		Yakima		Red Mountain		Columbia Valley		Walla Walla		Other		State Total	
White Varieties	**Total**	**Bearing**	**Total**	**Bearing**	**Total**	**Bearing**	**Total**	**Bearing**	**Total**	**Bearing**	**Total**	**Bearing**	**Total**	**Bearing**
Chardonnay	0	0	3130	2920	50	40	3380	3250	60	60	20	20	6640	6290
Chenin Blanc	0	0	150	150	20	20	280	280	0	0	0	0	450	450
Gewurztraminer	0	0	410	320	10	10	230	190	10	10	10	10	670	540
Muscat Canelli	0	0	20	10	0	0	80	80	0	0	0	0	100	90
Pinot Gris	10	10	210	140	0	0	90	60	0	0	20	20	330	230
Sauvignon Blanc	0	0	250	220	20	20	440	440	0	0	0	0	710	680
Semillon	0	0	140	140	10	10	400	390	0	0	0	0	550	540
Voignier	0	0	100	30	0	0	120	10	10	10	0	0	230	50
White Riesling	0	0	910	750	10	10	1260	1160	10	10	10	10	2200	1940
Other White	30	30	20	10	20	10	30	20	0	0	20	20	120	90
Total White	**40**	**40**	**5340**	**4690**	**140**	**120**	**6310**	**5880**	**90**	**90**	**80**	**80**	**12000**	**10900**
Red Varieties														
Cabernet Franc	0	0	230	220	20	20	460	460	40	20	0	0	750	720
Cabernet Sauvignon	0	0	1100	1050	250	230	4360	3650	330	190	10	10	6050	5130
Lemberger	0	0	160	130	20	10	50	40	0	0	0	0	230	180
Malbec	0	0	30	10	0	0	50	30	10	10	0	0	90	50
Merlot	0	0	1940	1790	150	140	3680	3550	200	140	10	10	5980	5630
Pinot Moir	20	10	150	150	0	0	80	60	0	0	40	40	290	260
Sangiovese	0	0	80	40	20	10	110	80	10	10	0	0	220	140
Syrah	0	0	580	440	70	50	1350	1070	100	50	0	0	2100	1610
Zinfandel	0	0	10	10	0	0	60	50	0	0	0	0	70	60
Other Red	20	20	30	10	40	20	90	40	20	10	20	20	220	120
Total Red	**40**	**30**	**4310**	**3850**	**570**	**480**	**10290**	**9030**	**710**	**430**	**80**	**80**	**16000**	**13900**
Total All	**80**	**70**	**9650**	**8540**	**710**	**600**	**1660**	**14910**	**800**	**520**	**160**	**160**	**28000**	**24800**

Source: 2002 Washington Wine Grape Acreage Survey

Table A.2. Sub-Appellation Characteristics

Variety	Wahluke Slope	Royal Slope	Columbia Basin	Alderdale Ridge	Columbia Gorge	Mattawa	Combined Regions*
White Varieties	**Total Acres**	**Total Acres**	**Total Acres**	**Total Acres**	**Total Acres**	**Total Acres**	**Total Acres**
Chardonnay	290	160	650	370	40	350	520
Chenin Blanc	40	0	30	10	0	0	0
Gewurztraminer	20	0	40	0	40	0	0
Muscat Canelli	0	0	0	10	0	0	40
Pinot Gris	0	0	30	0	0	0	10
Sauvignon Blanc	40	0	100	40	0	10	20
Semillon	20	0	30	0	0	60	0
Voignier	10	0	10	50	0	10	10
White Riesling	130	0	220	30	0	50	190
Other White	10	0	0	20	0	0	0
Total White	560	160	1110	530	80	480	790
Red Varieties							
Cabernet Franc	60	190	60	100	0	50	60
Cabernet Sauvignon	640	0	400	660	10	600	710
Lemberger	0	0	0	30	10	0	0
Malbec	0	0	0	20	0	0	10
Merlot	380	170	430	500	10	700	790
Pinot Moir	10	0	50	0	10	0	0
Sangiovese	20	0	30	20	0	10	30
Syrah	250	120	150	230	10	130	120
Zinfandel	20	0	0	40	0	0	0
Other Red	10	0	30	40	0	10	0
Total Red	1390	480	1150	1640	50	1500	1720
Total All	1950	640	2260	2170	130	1980	4230

* Data for Canoe Ridge, Cold Creek and Wallula are combined to avoid disclosing information about individual operations.

Source: 2002 Washington Wine Grape Acreage Survey

Table A.3. Washington Winery Characteristics

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Andrake Cellars	2,700	18,000	38	Cabernet Sauvignon, Merlot, Cabernet Franc
Andrew Will	4,000	N/A	N/A	Merlot, Cabernet Sauvignon, Sangiovese
Arbor Crest Wine Cellars	20,000	100,000	110	Sauvignon Blanc, Chardonnay, Merlot
Badger Mountain Inc.	30,000	300,000	80	Chardonnay, Cabernet Sauvignon, Merlot
Bainbridge Island Vineyards and Winery	2,200	10,000	8	Muller Thurgau, Pinot Noir, Slegerrebe
Balcom and Moe	4,000	20,000	300	Chardonnay, Sauvignon Blanc, Merlot
Barnard Griffen Winery	30,000	100,000	N/A	Chardonnay, Sauvignon Blanc, Merlot
Blackwood Canyon Vintners	12,000	100,000	85	Merlot, Cabernet Sauvignon, Chardonnay
Bonair Winery	6,000	30,000	74	Chardonnay, Riesling, Cabernet Sauvignon
Bookwalter Winery LLC	12,000	35,000	54	Riesling, Chardonnay, Cabernet Sauvignon
Bunchgrass Winery	400	1,000		Cabernet Sauvignon
Cadence	900	N/A	11	Merlot, Cabernet Sauvignon, Cabernet Franc
Camaraderie Cellars	1,250	6,000	N/A	Cabernet Sauvignon, Sauvignon Blanc
Canoe Ridge Estates (Chateau Ste. Michelle)	N/A	N/A	N/A	N/A
Canoe Ridge Vineyard	3,000	57,167	161	Merlot, Chardonnay, Cabernet Sauvignon
Cascade Cliffs	2,500	5,000	23	Nebbiolo, Barbera, Petite Sirah
Caterina Winery	6,500	18,000	N/A	Chardonnay, Merlot, Cabernet Sauvignon
Cavatappi Winery	800	2,000	N/A	Nebbiolo, Sengiovese, Cabernet Sauvignon
Cayuse Vineyards	1,600	N/A	34	Syrah, Cabernet Sauvignon, Merlot
Chateau Ste. Michelle	641,400	2,717,000	3400	Chardonnay, Merlot, Cabernet Sauvignon

Table A.3. Continued

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Chatter Creek	1,200	3,500	N/A	Cabernet Sauvignon, Syrah, Pinot Gris
China Bend Vineyards and Winery	1,500	5,000	9	Marechel Foch, Lemberger, Chardonnay
Chinook Wines	3,000	10,000	N/A	Chardonnay, Merlot, Sauvignon Blanc
Claar Cellars (Pasco)	N/A	138,000 combined	70 combined	Merlot, Cabernet Sauvignon, Riesling
Claar Cellars (Zillah)	20,000	138,000 combined	70 combined	Merlot, Cabernet Sauvignon, Riesling
Columbia Crest	1,662,020	6,100,000	2500	Chardonnay, Merlot, Cabernet Sauvignon
Columbia Gorge Winery, Inc.	500	4,000	5	Chardonnay, Gewurztraminer, Merlot
Columbia Winery	160,000	23,0000	N/A	Chardonnay, Cabernet Sauvignon, Merlot
Coventry Vale (Mattawa)	N/A	N/A	N/A	N/A
Coventry Vale (Prosser)	N/A	1,600,000	N/A	N/A
Delille Cellars Inc.	5,750	30,000	60	Cabernet Sauvignon, Merlot, Cabernet Franc
Distefano Winery, LTD.	4,500	6,000	N/A	Cabernet Sauvignon, Merlot, Syrah
Domaine Ste. Michelle	448,000	N/A	N/A	Champagne
Dunham Cellars	5,000	20,000	21	Cabernet Sauvignon, Syrah
E.B. Foote Winery	2,100	12,000	N/A	Cabernet Sauvignon, Merlot, Chardonnay
Eaton Hill Winery	1,700	5,000	N/A	Chardonnay, Muscat Canelli, Cabernet Sauvignon
Facelli Winery	4,500	16,000	N/A	Merlot, Cabernet Sauvignon, Sauvignon Blanc
Fairwinds Winery	450	5,000	10	Lemberger, Gewurztraminer, Cabernet Sauvignon
Forgeron Cellars	6,000	30,000	10	Cabernet Sauvignon, Merlot, Syrah
Glen Fiona	3,400	10,000	N/A	Syrah
Gordon Brothers Winery	12,000	55,000	95	Merlot, Cabernet Sauvignon, Chardonnay

Table A.3. Continued

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Greenbank Cellars, LTD.	500	2,000	3	Riesling, Sauvignon Blanc
Harlequin	1,500	10,000	N/A	Syrah, Cabernet Sauvignon, Pinot Noir
Hedges Cellars (Benton City)	55,000	240,000 combined	125 combined	Cabernet Sauvignon, Merlot, Chardonnay
Hedges Cellars (Issaquah)	N/A	240,000 combined	125 combined	Cabernet Sauvignon, Merlot, Chardonnay
Hightower Cellars	950	4,700	N/A	Cabernet Sauvignon, Merlot
Hinzerling Winery	1,500	10,000	N/A	Cabernet Sauvignon, Merlot, Gewurztraminer
Hogue Cellars	450,000	180,000	500	Sauvignon (Fume) Blanc, Merlot, Chardonnay
Hoodsport Winery, Inc.	18,000	33,000	17	Merlot, Chardonnay, Gerwurztraminer
Horizon's Edge Winery	1,200	15,000	20	Pinot Noir, Muscat Canelli, Gewurztraminer
Hyatt Vineyards Winery	30,000	245,433	120	Chardonnay, Merlot, Cabernet Sauvignon
Isenhower Cellars	2,500	5,000	15	Cabernet Sauvignon, Syrah
J M Cellars	1,000	1,200	10	Cabernet Sauvignon, Merlot, Syrah
Kalamar Winery	500	3,000	N/A	Merlot, Syrah
Kestrel Vintners	10,000	35,000	150	Syrah, Cabernet Sauvignon, Merlot
Kiona Vineyards Winery	25,000	90,000	70	Chardonnay, Cabernet Sauvignon, Riesling
Knipprath Cellars	5,000	12,000	N/A	Chardonnay, Cabernet Sauvignon, Merlot
Latah Creek Wine Cellars	12,000	35,000	N/A	Chardonnay, Merlot, Cabernet Sauvignon
L'ecole No. 41	20,000	100,000	140	Merlot, Semillon, Cabernet Sauvignon
Leonetti Cellar	5,750	10,000	20	Cabernet Sauvignon, Merlot, Sangiovese
Lopez Island Vineyards	2,000	6,000	6	Madeleine Angevine, Chardonnay, Cabernet Sauvignon

Table A.3. Continued

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Lost Mountain Winery, Inc.	1,200	3,000	N/A	Cabernet Sauvignon, Merlot, Syrah
Market Cellar Winery	900	6,000	N/A	Cabernet Sauvignon, Merlot, Chardonnay
Marshal's Winery	2,000	3,000	17.5	Cabernet Sauvignon, Cabernet Franc, Merlot
Maryhill Winery	14,000	N/A	N/A	Chardonnay, Merlot, Syrah
Matthews Cellar	3,600	N/A	N/A	Cabernet Sauvignon, Merlot, Cabernet Franc
McCrea Cellars, Inc.	2,500	9,000	13	Syrah, Viognier, Chardonnay
Moonlight Sparkling Wine Cellar, LLC	2,000	5,000	N/A	Champagne
Mount Baker Vineyards, Inc.	6,000	30,000	6	Muller-Thurgau, Madeleine Angevine, Chasselas
Mountain Dome Winery	6,000	31,500	N/A	Champagne
Northstar	N/A	N/A	N/A	
Oakwood Cellars	1,675	15,000	3	Chardonnay, Merlot, Lemberger
Olympic Cellars	2,500	8,000	0.5	Merlot, Cabernet Sauvignon, Chardonnay
Owen Sullivan Winery	1,500	N/A	N/A	N/A
Pasek Cellars Winery	2,500	N/A	N/A	Cabernet Sauvignon, Syrah
Patrick M. Paul Vineyards	650	2,500	3	Cabernet Franc, Merlot, Cabernet Sauvignon
Pepper Bridge Winery	4,200	N/A	200	Cabernet Sauvignon, Merlot, Syrah
Pontin Del Roza Winery	4,200	35,000	350	Merlot, Cabernet Sauvignon, Riesling
Portteus Vineyard and Winery	4,000	N/A	47	Cabernet Sauvignon, Merlot
Preston Premium Wines	12,000	160,000	171	N/A
Quilceda Creek Vintners, Inc.	4,500	24,000	35	Cabernet Sauvignon
Reininger Winery	2,000	6,550	N/A	Cabernet Sauvignon, Merlot, Syrah
RL Wine Company	2,500	N/A	N/A	Merlot
Robert Karl Cellars	1,600	N/A	N/A	N/A
Russell Creek Winery, LLC	2,000	N/A	N/A	Cabernet Sauvignon, Merlot
Sagelands Vineyard	30,000	30,000	410	Cabernet Sauvignon, Merlot

Table A.3. Continued

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Saintpaulia Vintners	500	2,600	N/A	Cabernet Sauvignon, Sauvignon Blanc
Salishan Vineyards	350	10,000	12	N/A
Samish Island Winery	400	400	N/A	N/A
San Juan Vineyards	3,000	10,000	8	Gewurztraminer, Merlot, Chardonnay
Sandhill Winery	2,000	N/A	40	Cabernet Sauvignon, Merlot
Seth Ryan Winery	2,000	8,500	64	Cabernet Sauvignon, Merlot, Gewurztraminer
Seven Hills Winery, LLC	7,500	24,000	N/A	Cabernet Sauvignon, Merlot, Syrah
Silver Lake Winery	75,000	250,000 combined	275 combined	Chardonnay, Cabernet Sauvignon, Merlot
Silver Lake Winery at Roza Hills	N/A	250,000 combined	275 combined	Chardonnay, Cabernet Sauvignon, Merlot
Snoqualmie Vineyards	87,012	N/A	N/A	Cabernet Sauvignon, Merlot, Chardonnay
Soos Creek Wine Cellars	800	4,000	N/A	Cabernet Sauvignon
Sorensen Cellars, LTD	500	N/A	N/A	Cabernet Sauvignon, Merlot, Cabernet Franc
Sunnyside Operations	360,000	1,700,000	2510	Chardonnay, Cabernet Sauvignon, Merlot
Tagaris Winery	4,000	N/A	140	Chardonnay, Cabernet Sauvignon, Merlot
Tamarack Cellars	5,000	N/A	N/A	Merlot, Cabernet Sauvignon, Syrah
Tefft Cellars	7,000	30,000	12	Cabernet Sauvignon, Merlot, Sangiovese
Terra Blanca	18,000	280,000	760	Merlot, Cabernet Sauvignon, Syrah
Three Rivers Winery	15,000	27,443	25	Merlot, Cabernet Sauvignon, Chardonnay
Thurston Wolfe Wines	1,000	3,000	N/A	Lemberger, Sangiovese, Syrah
Trey Marie Winery	7,000	20,000	132	Merlot, Cabernet Sauvignon, Cabernet Franc
Tucker Cellars Winery	6,000	45,000	80	Pinot Noir, Gewurztraminer, Muscat Canelli

Table A.3. Continued

Winery (Bonded)	Production Capabilities (Cases/Year)	Storage Capacity (Gallons)	Vineyard Acreage Controlled	Top Varietals
Vashon Winery	750	N/A	N/A	Cabernet Sauvignon, Merlot, Semillon
Walla Walla Vintner	1,800	N/A	N/A	Merlot, Cabernet Sauvignon, Cabernet Franc
Washington Hills Cellars	70,000	450,000	N/A	Chardonnay, Cabernet Sauvignon, Merlot
Waterbrook Winery	30,000	135,000	N/A	Chardonnay, Merlot, Cabernet Sauvignon
Whidbey Island Winery and Vineyard	2,700	10,000	7	Pinot Gris, Lemberger, Merlot
White Heron Cellars	1,500	5,000	25	Cabernet Franc, Syrah, Rousanne
Widgeon Hill Winery	500	N/A	N/A	Merlot, Cabernet Sauvignon, Chenin Blanc
Willow Crest Winery/Snipes Gap Vineyards Inc.	1,100	3,600	135	Pinot Gris, Merlot, Cabernet Sauvignon
Wilridge Winery	2,000	2,000	N/A	Merlot, Cabernet Sauvignon
Wineglass Cellars	3,500	5,300	N/A	Cabernet Sauvignon, Merlot, Chardonnay
Woodward Canyon Winery	15,000	N/A	N/A	N/A
Wyvern Cellars	20,000	35,700	N/A	Cabernet Sauvignon, Chardonnay, Merlot
Yakima River Winery	24,000	102,000	90	N/A

Source: Wines and Vine's Buyer's Guide 2002