

Economic & Fiscal Impacts of

# Wine & Wine Grapes in Washington State



August 2015

prepared for



prepared by





# ACKNOWLEDGEMENTS



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# EXECUTIVE SUMMARY

## **The wine industry is a significant and growing economic sector in Washington.**

The wine industry is one of earth's oldest industries and wine has been a major import to the United States throughout the country's history. Wine from Italy and France define the industry's origins and the history of U.S. wine consumption. California became a domestic source of wine beginning in the 1800s and then flourished in the U.S. and internationally beginning in the latter half of the twentieth century. It is within this age-old, global market place that Washington State wine continues to grow in prominence and compete for market share, arguably the most crowded and mysterious product market among all industries.

Wine in Washington is on the rise. With increasing market share, appreciation of the quality and value of Washington wines, and a focus on tourism, the opportunities for wineries of all sizes seem evident. Findings from this study illustrate the growing importance of wine production as a driver of economic growth across many regions of the state. However, these opportunities also come with challenges, and meeting those challenges is specific to each winery based upon their products, location, market, marketing efforts, and distribution, among many other factors.

This report provides an update on the economic performance of the wine industry in Washington State through 2013 and describes the near-term and long-term opportunities for wine in Washington. The analysis includes industry measures, as well as an impact analysis of the importance of the industry to the state of Washington.

## **Wine sales and production in Washington are growing.**

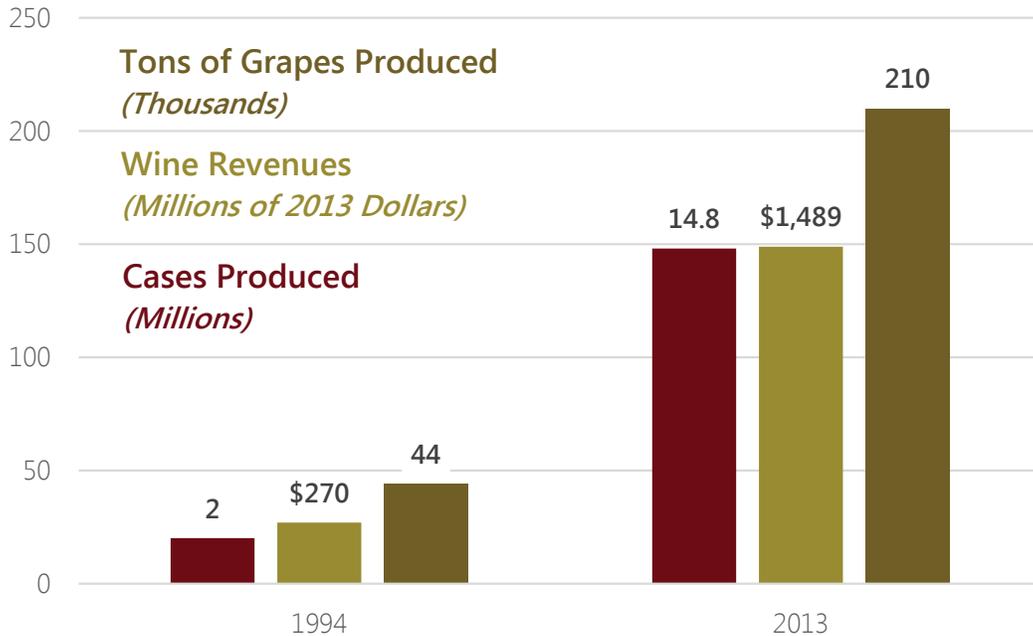
In 2013, 800 wineries in Washington sold nearly \$1.5 billion worth of Washington State wine. This represents an 8.7% compound annual growth rate (CAGR), adjusted for inflation, up from \$1.1 billion in 2009, the last year the industry commissioned an economic impact study. The number of wineries has increased from 650 in 2009 to 800 in 2013, or 23.1% total growth during that time.

In 2013, an estimated 50,000 acres of wine grapes produced 210,000 tons of wine grapes, up from 156,000 in 2009, up 35% during that time, for a CAGR of 7.7%. In 2009, 36,000 acres of grapes were planted; acres planted grew by 39% between 2009 and 2014. Preliminary estimates show another record harvest in 2014, for a total of 227,000 tons harvested.

Forecasts by the Washington State Wine Commission project continued growth in grape harvests in Washington, which will translate to record production in coming years.<sup>1</sup> Barring major climate events, grape yield forecasts show continued growth of between 5.0% and 9.1% per year through 2019, when wine grape tons harvested are expected to exceed 300,000 tons.

From 1994 to 2013, wine production in Washington increased from just under two million cases to 14.8 million cases, a CAGR of 11.2% (**Exhibit E-1**).

### Exhibit E-1. Cases Produced, Wine Revenues, and Wine Grapes Harvested, 1994 and 2013



Sources: Washington State Department of Revenue, 2015; Altria Group, 2014; United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2015.

<sup>1</sup> Yakima Herald, “Another Record State Wine Crush,” February 10, 2015, <http://www.yakima-herald.com/news/latestlocalnews/2903158-8/its-official-another-record-state-wine-crush>

## **Increasing market share**

Sales of Washington State wine as a share of all wine sales in Washington were 24% in 2014 and have generally held constant in the past few years. Total wine sales have increased in recent years to a record high of 1.2 cases per capita in 2013 nationally,<sup>2</sup> and Washington State wine sales have grown along with the total. Washington's market share lies largely in the premium market.<sup>3</sup>

The world wine market is very large and Washington has a relatively small portion of it. In 2013, the United States imported wine valued at a total of \$6.7 billion, \$2.4 billion of which was from France and \$1.7 billion of which was from Italy. Taken together, the U.S. exported \$1.8 billion in wine in 2013.<sup>4</sup> Washington State's wineries exported a combined \$24.9 million in wine in 2013.<sup>5</sup>

Out-of-state wine sales are an economic development opportunity for Washington. In 2013, reported out-of-state sales totaled at least \$659.9 million, including \$24.9 million in foreign exports.<sup>6</sup>

## **The future of wine in Washington State depends on continuing market penetration, leveraging its high quality and meeting some inherent challenges.**

### **Washington State wine sales growth depends on a combination of increasing share in markets where Washington is currently active and strategically expanding into new markets.**

Growth opportunities for Washington State wine sales rely on increasing market share in Washington as well as in key target markets in the U.S. and abroad. The Washington State Wine Commission, pursuant to its mission of marketing the state's wine to generate demand, engages in regular trade missions throughout the U.S. and around the world. Recent efforts included Minneapolis, Washington DC, Chicago and San Diego in the U.S., and abroad in Canada, Northern Europe, South Korea, China and Japan.

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2 The Wine Institute, 2014; Fredrikson & Associates, 2014.

3 Bostrom, Geralyn and Jack Brostrom, "The Business of Wine: an Encyclopedia," Greenwood Publishing, 2009.

4 United States Census Bureau, U.S. International Trade Statistics, [http://censtats.census.gov/cgi-bin/naic3\\_6/naicMonth.pl](http://censtats.census.gov/cgi-bin/naic3_6/naicMonth.pl)

5 Washington State Department of Revenue, 2015; WISER Trade, 2015.

6 The reported total of \$659.9 million represents the sum of sales imputed from disclosed tax savings from the business & occupation tax exemption for out-of-state sales. Thirty-four wineries that made out-of-state sales and benefited from the exemption elected not to have their savings disclosed publicly, explaining why the \$659.9 in sales estimate is a minimum value.

## **Washington State wines are a tremendous value, gaining appreciation worldwide.**

The attention garnered by Washington State wine has increased with production.

In 2014, Wine Enthusiast, Wine Spectator, and Wine & Spirits included 32 wineries and 35 distinct wines from Washington State in their “Top of 2014” lists. With more than 18,000 submissions reviewed between the three magazines and just 100 top slots each, these magazines included more Washington State wines than the state’s share of national production alone would suggest.

Washington State wine grape growers utilize relatively low land prices to increase wine grape production. In California, wine grape land can sell for between \$11,000 and \$30,000 per acre, with highs of \$300,000 per acre in Napa Valley. In Washington, land suitable for growing wine grapes sells for less per acre.<sup>7</sup>

## **Wine production in Washington is diverse, led by large, medium and small producers and critical support organizations.**

The state’s largest wine producer is Ste. Michelle Wine Estates, with multiple winery locations and labels.

The next 50 wineries by size of production accounted for an additional 39% of the state’s production, or just under 6 million cases.<sup>8</sup> The vast majority of Washington State wineries, however, are small operations: in 2013, more than 64% of the state’s wineries sold less than 1,000 cases.

The state’s wineries are surrounded by an ecosystem of support entities including custom crush facilities, bottle makers, mobile bottling units, specialty financial and administrative services, and agricultural suppliers. Viticulture and enology programs at Washington State University, Walla Walla Community College, South Seattle College, Yakima Valley Community College, and elsewhere across the state provide critical training for wine makers in the state. These programs also provide valuable technical assistance, identifying problems like pests and rare environmental challenges as well as pointing winemakers and vineyard managers toward responsible solutions.

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<sup>7</sup> UC Cooperative Extension, 2012; American Society of Farm Managers and Rural Appraisers, 2014.

<sup>8</sup> The Wine Institute, 2014; Fredrikson & Associates, 2014. <http://www.wineinstitute.org/resources/statistics/article86>

## Opportunities and Challenges

Total consumption of wine and wine consumption per capita are at all-time highs in the United States,<sup>9</sup> and a recent Gallup poll indicates that Americans' alcoholic beverage preference is shifting from beer to wine and liquor.<sup>10</sup> These statistics represent an opportunity for Washington State wine to continue to grow its market share nationally.

Winery owners need to assess whether there is sufficient demand for their brand to justify increasing production. Scaling involves many factors, such as access to grapes, distribution channels, equipment costs, and land, among many other considerations. At the same time, some winemakers choose not to scale up production, even when there is sufficient demand. These are winemakers who have already reached what they consider to be their ideal level of production, balancing the scale of production with their control over production. As wineries increase in size, all operating costs scale with the exception of cooperage, which is directly tied to production.

## Wine Production Supports Tourism

Washington's wine industry is an important attractor of tourists. As the state's wine offerings increase in popularity, its wineries become more attractive tourist destinations. Wineries attract tourists through several different amenity offerings, including tasting rooms, on-site restaurants, retail, picnic areas, and special events. Grape crush events, winemaker dinners, and wine club-exclusive tastings are all major attractors of tourists. In 2014, data shows more than 60% of the state's wineries had tasting rooms.

In 2014, an estimated 808,000 tourists visited wineries in Washington State, including 2.1 million winery visits. Total spending by wine tourists reached an estimated \$193.1 million in 2014, supporting 1,800 jobs.<sup>11</sup>



Source: WashingtonWineTours.com

<sup>9</sup> The Wine Institute, 2014; Fredrikson & Associates, 2014. <http://www.wineinstitute.org/resources/statistics/article86>

<sup>10</sup> Gallup Consumption Habits Poll, 2014. <http://www.gallup.com/poll/163787/drinkers-divide-beer-wine-favorite.aspx>

<sup>11</sup> Community Attributes Inc., 2015. Wine tourist spending refers to non-wine purchases tied to wine tourism, such as hotel rooms, food, and travel expenses. Wine tourist purchases of wine are captured in winery revenue estimates.

## Wine Production Has Sizable Impacts on the State Economy

Washington State's wine industry had direct revenues of just under \$2.4 billion in 2013, including \$1.5 billion in winery revenue. These activities had an additional \$2.4 billion in secondary revenue impacts and supported more than 25,900 jobs throughout the state (direct and secondary). Washington's wine industry had a total economic impact of \$4.8 billion in business revenues.

The industry's sizable economic impacts are matched with its fiscal impacts. In 2013, wine and wine-related activities supported \$61.9 million in state taxes through direct and secondary effects. Direct taxes paid by wineries totaled \$10.0 million, included \$6.8 million in sales tax and \$1.7 million in assessments.

### Key Metrics

In 2013, Washington's wine industry...

#### Produced:

- 210,000 tons of wine grapes
- 14.8 million cases of wine

#### Received:

- \$236.2 million in wine grape revenues
- \$2.4 billion in direct and secondary wine-related revenues

#### Employed:

- 2,790 workers in vineyards
- 3,260 workers in wineries

#### Supported through economic impacts:

- \$4.8 billion in business revenues
- \$61.9 million in state taxes
- 25,900 jobs



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# 1

## Introduction



## 1.1 Purpose & Background

Wine production is an important and growing economic activity in Washington State. Wine production involves an extensive supply chain, beginning with grape growers and ending with grocery stores and distribution networks, and many steps in between. Over the years, customers across the U.S. and world have increasingly recognized and sought Washington State wines for their high quality and competitive price-to-value ratio.

The purpose of this report is to illustrate these linkages across the state economy, from supply chain transactions—such as sales of wine grapes to wineries—to the economy-wide impacts of wages spent by workers in Washington’s wine industry.

Starting with an overview of the state’s wine industry, this study will proceed to describe and quantify the growing wine tourism segment; the economic impacts of wine in Washington State; the fiscal impacts of Washington State wine cluster; and feedback from stakeholder interviews.

## 1.2 Organization of Report

The remainder of this report is organized as follows:

- **Wine Industry Overview.** The history, breadth, and scale of the wine industry in Washington, and discussion of the various segments of the broader industry cluster, including suppliers and supporting entities.
- **Business Model Growth Opportunities and Challenges.** A discussion of growth trends nationwide, growth among wineries by size, and investment costs and challenges.
- **Wine Industry Cluster Metrics.** A data-rich discussion of Washington's wine industry cluster, engaging historical and contemporary sources to profile the size and breadth of vineyards, wineries, and other businesses associated with the wine industry.
- **Wine Tourism.** An examination of the extent and impact of the state's wine tourism industry and comparisons with California, Washington's chief competitor.
- **Economic Impacts of the Wine Industry.** An analysis of the economic impacts of Washington's wine industry, including total business revenues, jobs, and wages supported by the industry statewide.
- **Wine Industry Impacts by Region.** A discussion of the impacts of the industry by select counties across the state.
- **Fiscal Impacts of Wine and Wine Grape Production.** An analysis of the tax impact of Washington's wine industry.
- **Summary of Findings.** A discussion of important themes throughout this report.



# 2

## Wine Industry Cluster Overview



## 2.1 History of Wine in Washington State

Washington's wine industry comprises vineyards, wineries, supply businesses, education and training organizations, and other industry support, including the Washington State Wine Commission itself. Today's wine industry in Washington can trace its origins back to 1825 when the state's first wine grapes were cultivated in Fort Vancouver. However, the industry is rooted in events that took place during the last ice age: the Missoula floods, occurring roughly 15,000 years ago, deposited nutrient-rich soil in the east of the state. The floods, combined with volcanic material deposited from periodic eruptions, have yielded excellent soil for growing grapes.

More than one century ago in 1914, William Bridgman planted wine grapes in Yakima valley. When prohibition was repealed in 1933, Bridgman established Upland Winery and introduced Dr. Walter J. Clore—who would later be referred to as “the father of Washington State wine”—to wine grape growing in Washington State. In 1937, Dr. Clore began research on grape varieties at Washington State College (now Washington State University). His research demonstrated that premium quality wine grapes could be grown in the volcanic soil and hot, dry climate of Central and Eastern Washington. He also identified varieties prime for planting in Washington.<sup>1</sup>

It wasn't until 1983, however, that Washington received its first American Viticultural Area (AVA) distinction, a major marketing boon and legal protection that became the groundwork for an additional 12 legal appellations defined in subsequent years. In 1985, the state produced approximately 13 million bottles of wine; in 2013, Washington State produced a record 178 million bottles.

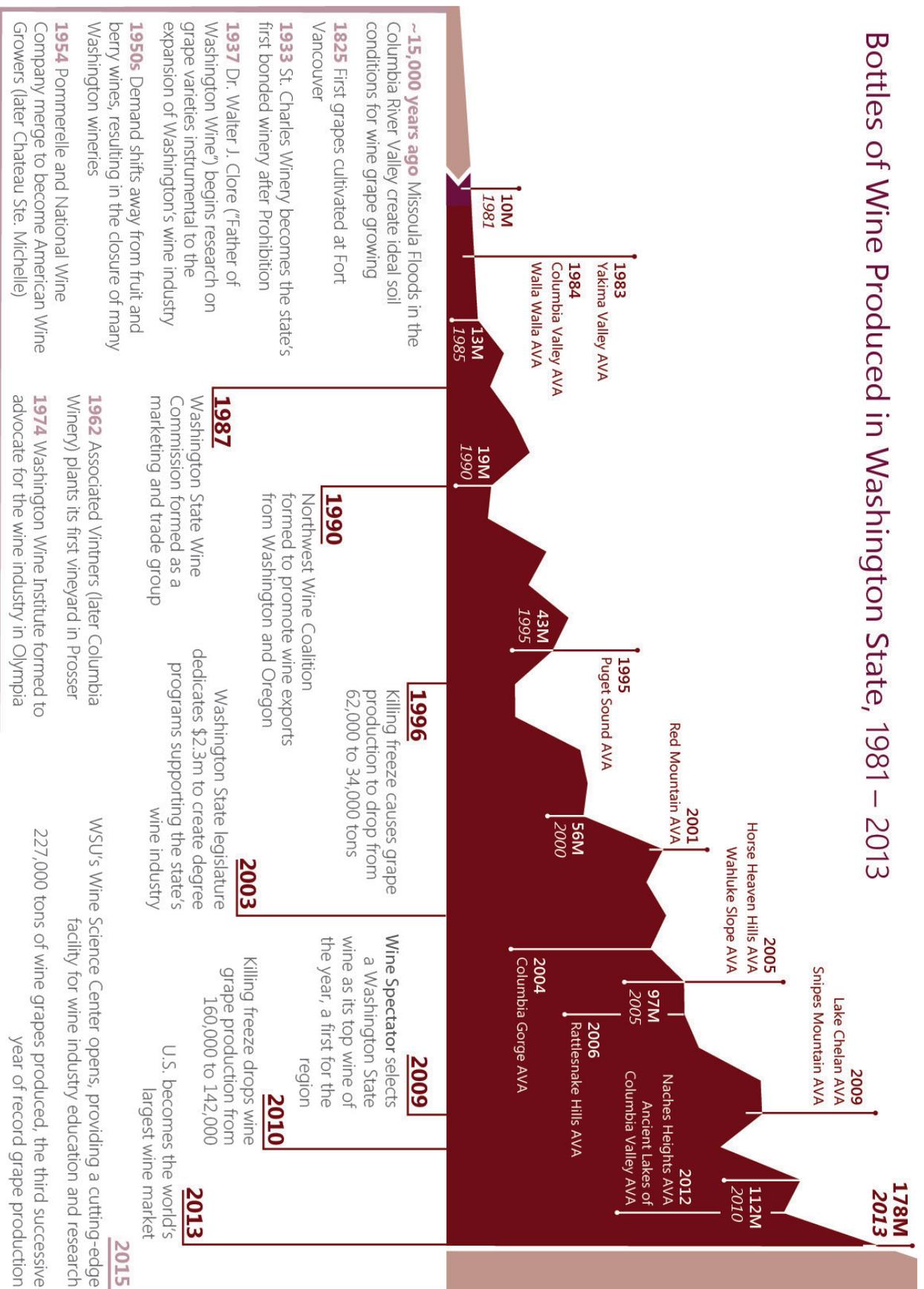
**Exhibit 2.1** describes major events in Washington State's wine industry from the Missoula Floods that gave Columbia Valley its distinctive terroir, to the state's most recent AVA designations, Ancient Lakes of Columbia Valley and Naches Heights. Bottles of wine produced overlay important historical events to provide context for the industry's growth in Washington. According to one interviewee, the industry is in a dynamic growth phase right now; despite a record year of production in 2014, the only constraint was wineries' capacity. The Washington State wine industry marked its third successive year of record wine grape production with 227,000 tons produced in 2014, 2,000 tons higher than the state's projections.

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<sup>1</sup> Parker, Tom. *Discovering Washington State wines*, Raconteurs Press 2002.

## Exhibit 2.1 Timeline

### Bottles of Wine Produced in Washington State, 1981 – 2013



Sources: Washington State Wine Commission, 2015; Community Attributes Inc., 2015; USDA NASS, 2015; Alcohol and Tobacco Tax and Trade Bureau, 2014.

## 2.2 Segments of the Wine Cluster in Washington

Washington's wine cluster encompasses a broad range of activities. These range from grape growers, agricultural support services—such as harvesting activities and crush events—to wine producers, wholesalers, and restaurants. Revenues are generated across many of these activities. For example, revenues can be generated from the sale of grapes from a grower to a wine producer—though not when a winery uses its own estate grapes—as well as through the additional mark-up generated from the sale of wine from a wholesaler to a restaurant or grocery outlet, and through final sale to the consumer.

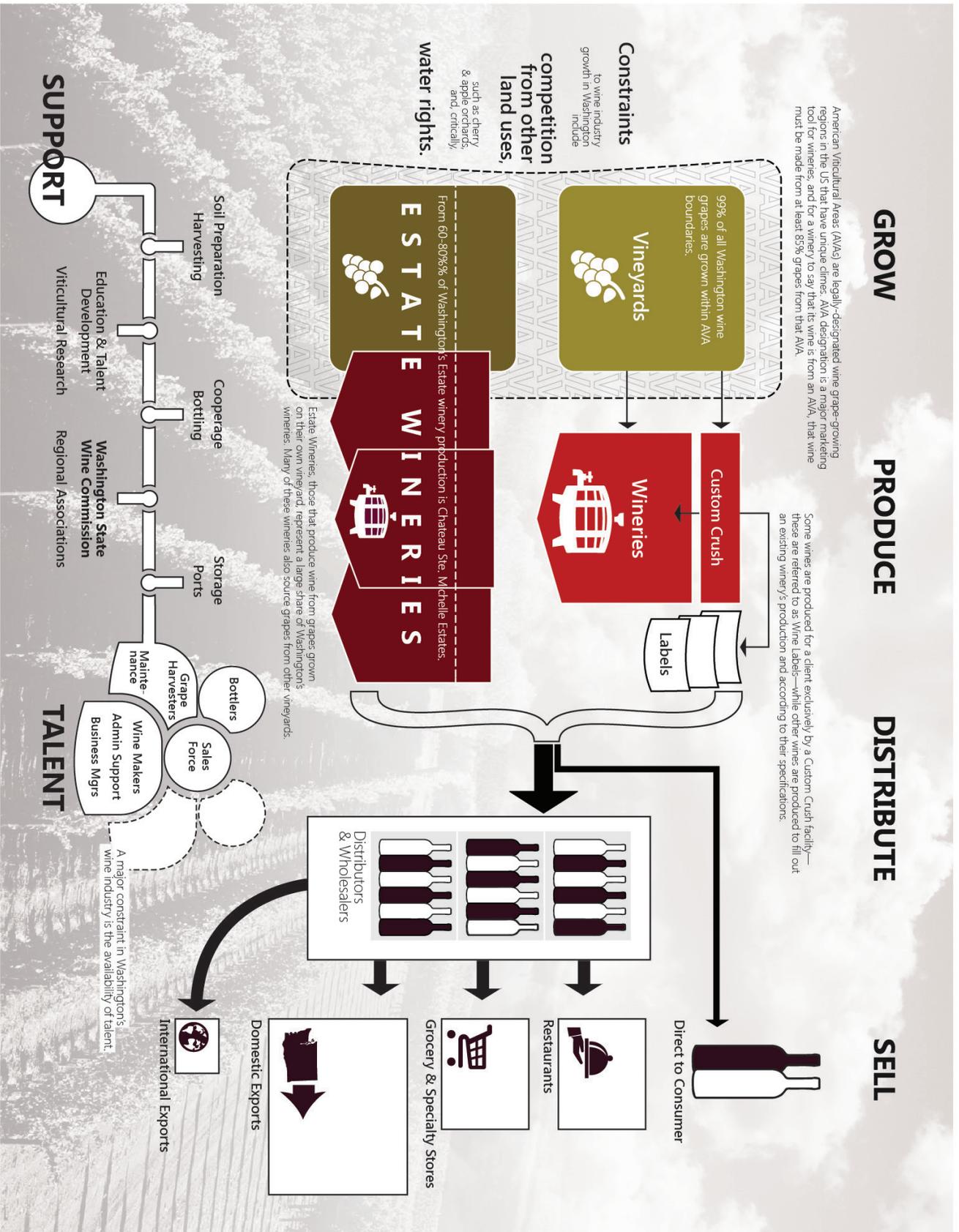
In this study, wine cluster activities are organized into five major categories, as illustrated in **Exhibit 2.2:**

1. Grape growing
2. Wine production
3. Wine distribution
4. Wine final sales
5. Support activities throughout this process

In many cases, participants in the wine cluster participate in more than one segment of the supply chain. For example, estate wineries—which, by definition, have their own vineyards—span production of grapes as well as wine. Similarly, small wineries rely more heavily on their own sales and distribution channels—such as wine clubs and tasting rooms—as a critical revenue source. Even wineries that operate their own vineyards often purchase additional grapes from other vineyards and estates, and sell some of their grape production to other wineries. In some cases, wineries may also sell directly to restaurants, bypassing wholesalers completely. In still other cases, custom crush facilities will produce wine on order for wine labels, with all sales to a wine label rather than a wholesaler or other form of distribution.

Support activities refer to additional services that are critical to wine production. These include harvesting support services, soil preparation, and crush activities. Wineries, especially small and medium-sized operations, may use external services such as bottlers and marketing support, while all wineries require supplies such as barrels and refrigeration equipment that must be procured from specialized wholesalers.

# Exhibit 2.2 Washington State Wine Industry Cluster



Sources: Washington State Wine Commission, 2015; Community Attributes Inc., 2015; USDA NASS, 2015; Alcohol and Tobacco Tax and Trade Bureau, 2014.

## 2.3 Examples of Wine Cluster Activities

In 2014, Washington State had 850 licensed wineries (up from 800 in 2013), and more than 600 vineyards, including operations that had both a winery and vineyard. These entities range from small operations producing fewer than 500 cases a year to Ste. Michelle Wine Estates, with nearly 8.4 million cases of wine produced in 2014 (up from 8 million in 2013). Along with these vineyards and wineries are the many suppliers and downstream businesses that are vital to the continued growth of the wine cluster in Washington.

The profiles in this section help illustrate these activities by segment of the cluster, including examples of the upstream and downstream and support activities represented in **Exhibit 2.2**. While not intended to be exhaustive, the businesses and organizations discussed below help illustrate the breadth of activities, scale, wine offerings, and geographic diversity of wine production across the state.

### Representative Vineyards

**McKinley Springs (Horse Heaven Hills).** First planted in 1980, McKinley Springs operates a 2,000 acre vineyard situated in the Horse Heaven Hills AVA, an area characterized by cooling winds, arid weather, and excellent growing conditions. The vineyard offers more than 20 different grape varieties grown across 200 vineyard blocks. Deep, broken basalt layers in the earth help absorb excess water, helping the vineyard maintain ideal moisture.

**Boushey Vineyards.** Yakima Valley's Boushey Vineyard has produced grapes for some of the state's most critically acclaimed wines. The vineyard, actually comprises five locations around Grandview with diverse soil and varying elevation. The vineyard produces Syrah, Merlot, Petit Verdot, and Cabernet Sauvignon grapes, among others.

**Grape House Vineyards (Spokane).** The owners of Grape House Vineyards in Spokane chose a hardy, cold-resistant varietal for their main planting. Leon Millot, a grape variety that produces dark, powerful reds, was their main choice and the vineyard is now a specialty producer of the uncommon varietal.

**Syncline Wine (Columbia Gorge).** Syncline's estate vineyard produces grapes inspired by those grown along the Rhone. The vineyard is a biodynamic farm, treating soil quality, plant growth, and livestock care as ecologically intertwined. Planting in one of the rockiest areas in the Columbia Gorge AVA, Syncline's owners chose rootstock and grape varieties especially suited to the soil and climate rather than change the soil to better suit certain varieties of grape.

**Champoux Vineyard (Horse Heaven Hills).** Champoux Vineyard’s critically acclaimed grapes are from some of the oldest vines in Washington. Originally part of the expansive Mercer Ranch, Paul and Judy Champoux first planted grape vines in 1972. Today, the 180-acre vineyard features Cabernet Sauvignon, Lemberger, Chardonnay, Riesling, and Merlot varieties, among others.

## Representative Wineries

**Ste. Michelle Wine Estates.** Ste. Michelle Wine Estates is the largest wine producer in Washington State. In 2013, the winery reported total shipments of nearly eight million cases, including nearly 2.8 million cases of Chateau Ste. Michelle wine, 1.8 million cases of Columbia Crest, and 1.4 million cases of 14 Hands. The company reported net revenues across all of its labels of \$609 million in 2013, up from \$561 million in 2012 and \$516 million in 2011. In 2013, an estimated 80% of all Washington winery out-of-state sales were by Ste. Michelle Wine Estates.

Ste. Michelle Wine Estates assists smaller wineries during tough years, especially during the winter of 2004. According to one industry insider, “at a time when people couldn’t get grapes, Ste. Michelle sold grapes. [They] are great mentors and partners to all; they share their research, they’re supportive, their viticulturists are actually [WSU] extension researchers themselves.” Many small Washington State wineries were started by former Ste. Michelle Wine Estates employees.

**L’Ecole No. 41.** L’Ecole No. 41 is a second-generation winery founded in 1983 by Jean and Baker Ferguson. Marty Clubb, the winery’s managing winemaker, is currently President and Director of the Washington Wine Institute—an organization that represents the interests of Washington’s wine industry to state legislators—and is one of two board members from Washington State for Wine America.

Today, the estate winery makes much of its wine from grapes grown on its own vineyards, Estate Ferguson and Estate Seven Hills, and sources the rest from sustainable vineyards across the state. L’Ecole wines are sold in 45 states and 20 countries, with roughly half of its sales within the state of Washington.

**Leonetti Cellar.** When Leonetti Cellar was founded in 1977, it was the first commercial winery in Walla Walla. Gary Figgins—Leonetti’s founding winemaker—planted wine grape rootstock three years prior on the family farm first tilled by his grandparents in 1906. What started as a hobby became a commercial operation when the region’s pea and asparagus canning industry collapsed in the 1990s. Today, Leonetti Cellar produces single vineyard wines under the leadership of Gary’s son, Chris Figgins.

Leonetti Cellar is one winery under the Figgins Family Wine Estates, along with Figgins Walla Walla Valley, Toil Oregon, and the Lostine Cattle Company. Together, they produce a combined 8,000 cases annually.

**Fidelitas.** Fidelitas winery, founded by winemaker Charlie Hoppes, is themed around making wine true to the Bordeaux wine varietal. The winery is focusing on its growing wine club, selling most of its wine directly to consumers in the Pacific Northwest. Hoppes himself started his winemaking career with a homemade batch of Riesling grapes crushed and fermented at his father-in-law's house. He later honed his winemaking skills at Ste. Michelle Wine Estates before starting Fidelitas.

**Arbor Crest.** The 29th official winery in Washington State, Arbor Crest sold its first wine, a Sauvignon Blanc, in 1982. The Spokane winery has since changed headquarters and the founders' daughter—after working as a winemaker in Sonoma County—has taken over as the head winemaker for Arbor Crest. The winery has built a new wine tasting facility on the premises and has opened an additional wine tasting room in the city of Spokane itself. The winery has increased production steadily since its first run in 1982 and is also able to source an increasing range of grape varieties for its offerings.

**Sleight of Hand.** Sleight of Hand Cellars is an example of a new generation of winemakers in Washington state. A young winery launched in 2007. Trey Busch, Jerry Solomon, and Sandy Solomon, the cellar's owners and winemakers, first met five years before opening at a wine tasting event. In 2010, the winery undertook rapid expansion, growing from a 3,000-case operation to one capable of producing 8,500 cases. Today, the winemakers produce two additional brands, resulting in a combined production across brands of 15,000 cases.

**Dusted Valley.** In 2003, Dusted Valley was founded in Walla Walla. The operation produces roughly 4,000 cases following the philosophy that “great wines are grown in the vineyard.” The winery uses sustainable farming practices and focuses on low-yield vines that produce high quality fruit on its four estate vineyards. Additionally, Dusted Valley purchases grapes from Lonesome Springs Ranch in Yakima Valley and Stone Tree on the Wahluke Slope.

Dusted Valley's estate vineyards are located in the Walla Walla Valley, and two of them are on the Oregon side of the valley, making it a rare operation. The winery has 88 acres planted in estate vineyards.

**Lake Chelan Winery.** The Lake Chelan Winery is the Chelan Valley's first winery, exemplary of smaller winemakers branching out into other areas of Washington, beyond Walla Walla and Woodinville. Steve and Bobbi Kludt, the winery owners, first came to the valley to grow apples. When the state apple industry exceeded historic production by 17% in 1998-1999, many growers had trouble finding markets for their crop. The Kludts pulled up their orchards and planted the first commercial wine grape vineyard in the Chelan Valley. Today, the winery offers wine tastings, tours, barrel tastings, and seasonal events like vineyard barbecues.

**Bainbridge Vineyards.** Bainbridge Vineyards produces wine from its certified organic vineyard on Bainbridge Island. The winery's original owners planted their first vines in the 1970s and a new generation of winemakers has reopened the vineyards and winery in 2013. Chief offerings include: Old-World style Pinot Noirs and Roses of Pinot Noir as well as dry, crisp whites.

**Tulip Valley Vineyard and Orchard.** Situated in Skagit Valley tulip region, the aptly named Tulip Valley Vineyard and Orchard produces red and white wines from local grapes as well as grapes from other parts of the state. The farm recently converted its 1920s dairy barn into a wine and cider tasting room.

### **Representative Support Services**

Support services include activities ranging from equipment suppliers, shipping and refrigeration services, harvesting support services, custom financial and administrative services, and specialty bottlemakers. These services and suppliers engage the wine industry at different stages in the lifecycle of wine, from production to final sale. The following examples of support services illustrate the range of support activities filled by private businesses.

**Bleyhl Country Stores.** South-Central Washington-based Bleyhl Country Stores is an agricultural supplies dealer. A farmer-owned cooperative since 1964, the company provides agricultural supply primarily in the Yakima Valley. Bleyhl's offerings support the state's agriculture, providing trellising supplies, fencing, netting, fertilizer, and chemicals for the state's orchards and vineyards.

**Bennu Glass.** Bennu Glass in Kalama, Washington makes glass bottles for many of the state's wineries. Crushed recycled glass, or "cullet," is combined with minerals, sand, limestone, and soda ash in Bennu's furnace before getting molded and cooled down. The finished product is a wine bottle composed of 50% recycled glass. Bennu produces only wine bottles in six shapes with specifications suitable for different types of wine. Sparkling wine, for example, must be bottled in a thicker vessel due to the additional pressure of carbonation.

**Railex Wine Services.** Railex Wine Services provides 500,000 square feet of refrigerated, bonded wine storage centered in a warehouse in Wallula, Washington. The center opened in February 2013 and has changed the distribution network for wineries in Eastern Washington. Rather than trucking cases of wine to the western part of the state to be shipped to the eastern U.S., wineries can distribute directly to the East Coast. At the facility's opening, Duane Wollmuth, executive director of the Walla Walla Valley Wine Alliance, noted that the facility offers the state's smaller wineries a chance to collaborate and share facility space as farms have done with Railex's produce facility.

**Wine Compliance Specialists.** Port Angeles-based Wine Compliance Specialists offers winemakers the opportunity to spend less time on compliance paperwork and filing. For the state's large number of small wineries that are too small to hire full-time accounting and administrative staff, this means spending less time on paperwork and more time on winemaking.

## **Higher Education Support**

Several institutions in Washington State offer advanced training and degrees in viticulture and enology, including the following:

**Washington State University**, the state's land grant university, engages in agricultural research and outreach to serve the state's unique agricultural needs. Increasingly, the university develops solutions to complex problems in viticulture and enology. WSU's new Wine Science Center is slated to open in June of 2015, a \$23 million facility representing grants and donations from multiple organizations. With room for both industry meetings and advanced winemaking research, the center will focus primarily on enology and is intended to act as a showplace for the state's wine industry. The university will hire a wine chemist for the center to further support wine research.

WSU offers viticulture and enology programs at the undergraduate and graduate levels, as well as certificate programs, to train the state's wine grape growers and vintners. WSU also offers a major in Wine Business Management at the Carson College of Business. Students in the major take courses in economics and chemistry to complement their training in hospitality management.

**Walla Walla Community College** offers a total lifecycle enology and viticulture program. Students learn about and perform each stage of wine production, from planting vines to marketing and selling the wine itself. At College Cellars, Walla Walla Community College's commercial winery, enology and viticulture students create white, red, sparkling, fortified, and ice wines under the direction of enology experts. Wines are made from the college's four estate teaching vineyards, which total six acres, where students prune and manage their vines throughout the year. Students learn canopy management, harvesting, and vineyard maintenance through hands-on experience. Students market and sell the wines in the College Cellars tasting room. Student wines dating as far back as 2002 are cellared in the college's wine library along with wines from around the world.

**The Northwest Wine Academy** at South Seattle Community College offers certificate programs in wine technology for students looking to complement their skill set with knowledge of wine. Puget Ridge Winery, the college's teaching winery, offers hands-on experience to students.

## American Viticultural Areas

American Viticultural Areas (AVAs) are wine-growing areas in the U.S. that have distinctive geographic, geological, and environmental features that ultimately result in unique wines (**Exhibit 2.3**). AVA status helps consumers identify wines within the region and protects a region's market label. In order for a region to gain AVA status, it must have evidence that the name of the proposed AVA is locally or nationally known as referring to the area, evidence that the proposed boundaries are legitimate, and evidence that the growing regions are distinctive, according to the Alcohol and Tobacco Tax and Trade Bureau (TTB). Once an AVA is established, at least 85% of the grapes used in a wine must be from the AVA for the winemaker to specify the appellation on the wine label.

**Yakima Valley** Washington's first AVA, Yakima Valley, was established in 1983. Yakima's long growing season and silt-rich, loamy soils make it a unique growing region. The region is planted primarily with Chardonnay, Merlot, and Cabernet Sauvignon, and is home to roughly one-third of the state's vineyard acreage.

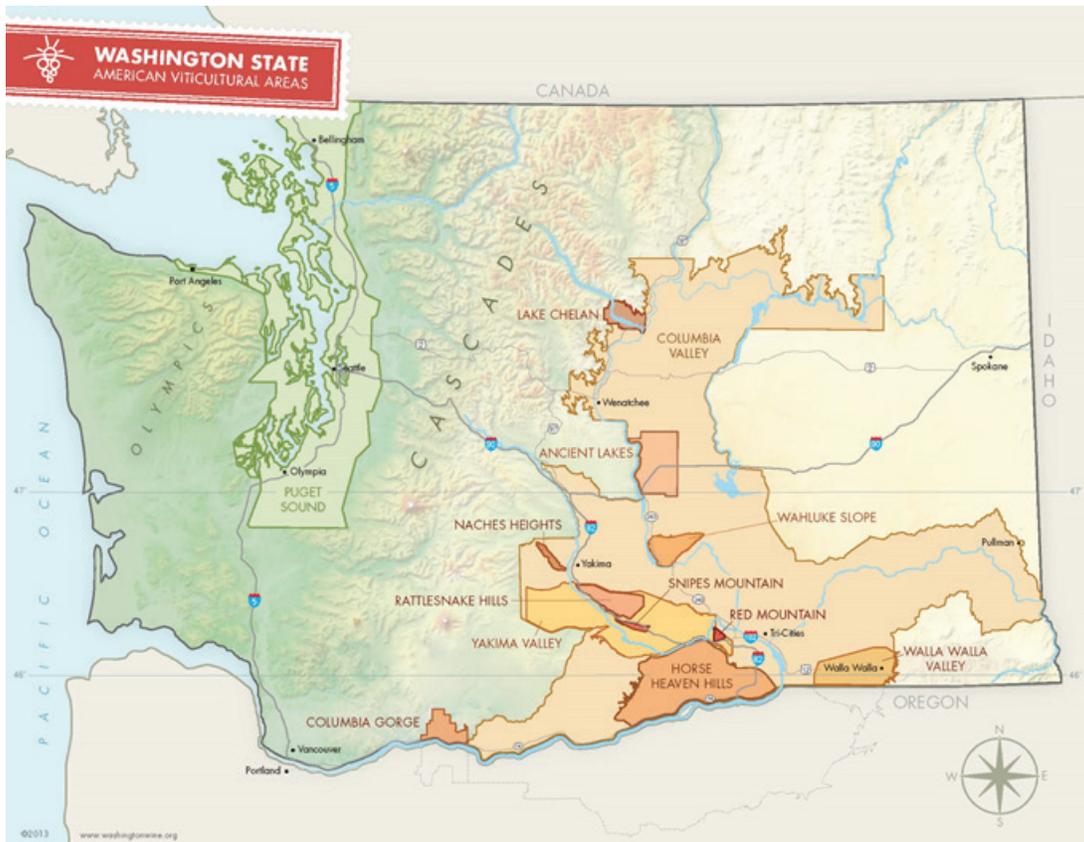
**Walla Walla Valley** Established just one year after Yakima Valley, Walla Walla Valley traces its wine grape ancestry back to the 1850s when Italian immigrants began growing vines in windblown soils. The region is primarily known for its red wine grape varieties like Cabernet Sauvignon, Merlot, and Syrah, but also grows a large quantity of Chardonnay grapes. The area has a long growing season, between 190 and 220 days, and soil with good drainage.

**Columbia Valley** Washington's largest AVA, Columbia Valley, contains almost all wine grape acreage in the state. At more than 43,000 acres planted, the AVA subsumes the AVAs of Red Mountain, Yakima Valley, Walla Walla Valley, Wahluke Slope, Rattlesnake Hills, Horse Heaven Hills, Snipes Mountain, Lake Chelan, Naches Heights, and Ancient Lakes of Columbia Valley.

**Puget Sound** The Puget Sound AVA was established in 1995. With more rain and a significantly more temperate winter than the state's other AVAs, Puget Sound produces distinctive grapes across its roughly 100 acres of planted vineyards. Many of the wines produced by the 20 wineries in the AVA follow a light, crisp style that is suited for the region's seafood offerings.

**Red Mountain** Named after the wine-red cheatgrass that blankets the sandy area, Red Mountain produces grapes that create robust, tannic reds. In 1997, without AVA status and the marketing boost that goes along with it, growers were able to charge up to 30% higher prices than the rest of the state for their grapes. Today, the Red Mountain AVA—the smallest in the state—is home to two of the state's most well-known vineyards, Ciel du Cheval and Klipsun, and has produced two of just 17 American wines to earn a 100-point rating from the Wine Advocate.

## Exhibit 2.3 Washington's American Viticultural Areas, 2014



Source: Washington State Wine Commission, 2015.

**Columbia Gorge** The Columbia Gorge AVA is located on the narrow passage between the temperate maritime climates in Western Washington to the desert climate in Eastern Washington. The region has a truly unique spectrum of rainfall and sunshine, with rain diminishing by roughly one inch over every mile from west to east. Varieties like Pinot Noir, Gewurztraminer, Chardonnay, Pinot Gris, and Riesling are primarily grown in the west of the appellation, while Cabernet Sauvignon, Syrah, Zinfandel, and Barbera are grown in the east of the appellation.

**Horse Heaven Hills** Running along the Columbia River, Horse Heaven Hills has steep south-facing slopes that have loamy soils with good drainage. Horse Heaven Hills is the appellation of the state's first, second, and third "100-point" wines. Roughly one-quarter of Washington's wine grape vineyards are located in the appellation, which has grown grapes since 1972.

**Wahluke Slope** Wahluke Slope has one of the driest and hottest climates in the state, and its soils are uniformly well-drained. This allows vineyard managers to precisely deliver water to vines, giving unprecedented control over vine ripening. The AVA produces Merlot, Syrah, and Cabernet Sauvignon, as well as Riesling, Chardonnay, and Chenin Blanc.

**Rattlesnake Hills** Rattlesnake Hills has roughly 1,500 planted acres across 29 vineyards. Producers in the area focus on Cabernet Sauvignon, Malbec, Merlot, Syrah, Chardonnay, and Riesling. Good air circulation in the area helps vineyard owners avoid early fall and spring frosts that threaten grapes and buds, respectively.

**Snipes Mountain** Snipes Mountain, the state's 10th AVA, is named after a 1850s rancher who settled and farmed the area. The mountain's slopes have rocky soil home to vineyards since 1914. AVA status was petitioned by Upland Vineyards, who first planted in 1917. The second-oldest Cabernet Sauvignon vines in the state are located in the AVA and have been producing grapes for more than 40 years.

**Lake Chelan** The Lake Chelan AVA is characterized by the coarse, sandy sediment in the area formed during the movement of ice age glaciers. Grapes grown in the appellation have discernable textures and minerals. Additionally, the proximity to the lake results in a milder climate than surrounding areas. The longer growing season and reduced risk of frost are valuable assets to wine grape growers.

**Naches Heights** Naches Heights, established in 2011, is a relatively small AVA with just 40 acres planted. The windblown soil is heavy in clay, which results in better water retention.

**Ancient Lakes of Columbia Valley** Ancient Lakes of Columbia Valley, Washington State's newest AVA, is home to roughly 1,400 acres of planted vineyards. Soils in the region contain very few nutrients, which results in grapes with more intense flavor. The land lends itself to white varieties, and the primary varieties grown in the area are Riesling and Chardonnay.



# 3

## Business Model Growth Challenges & Opportunities

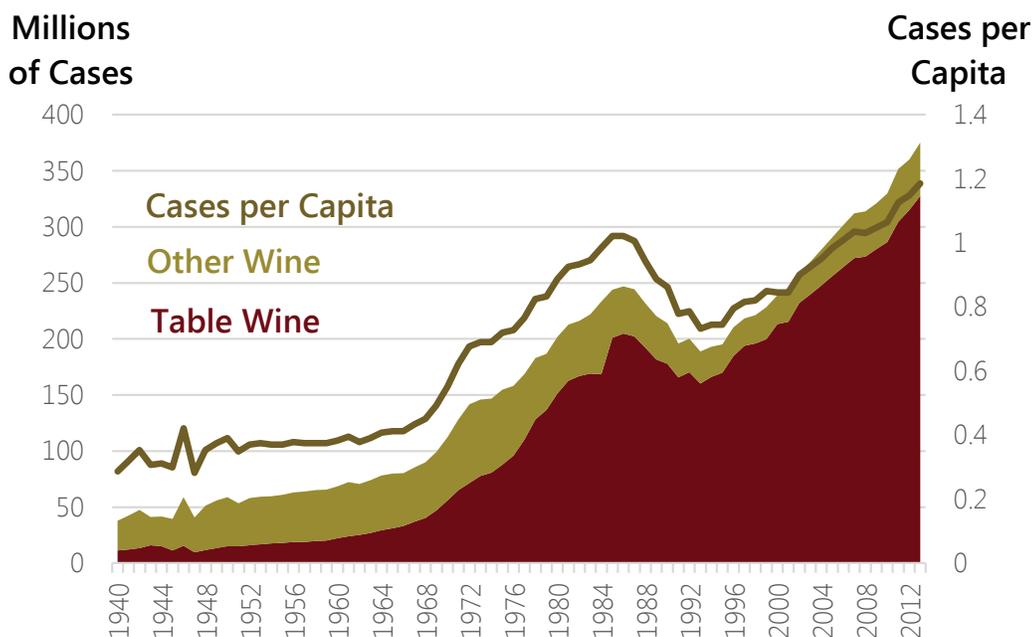


# THREE GROWTH CHALLENGES & OPPORTUNITIES

## 3.1 Opportunities for Growth

Consumption of wine in the U.S. was at an all-time high in 2013 on both a per capita and gross basis (**Exhibit 3.1**). Total consumption increased faster than per capita consumption of wine. Consumption of non-table wines (e.g. Vermouth, Sherry, and Port) decreased as a share of total wine consumption. According to a 2013 Gallup poll, Americans are consistently consuming wine more frequently than liquor and roughly as frequently as beer. In the 1990s, the breakdown of Americans by the category of alcoholic beverage they consumed the most was 47% beer, 27% wine, and 21% liquor. Further, that shift in preference is more dramatic among respondents 29 years old and younger. In 1992, more than 70% of Americans in this age range preferred beer. In 2013, that number dropped to 41%. The shift of preference from beer to wine and liquor represents an opportunity for Washington State wineries to help meet increased demand.<sup>1</sup>

**Exhibit 3.1 Millions of Cases Consumed and Cases of Wine Consumed Per Capita, United States, 1941-2013**

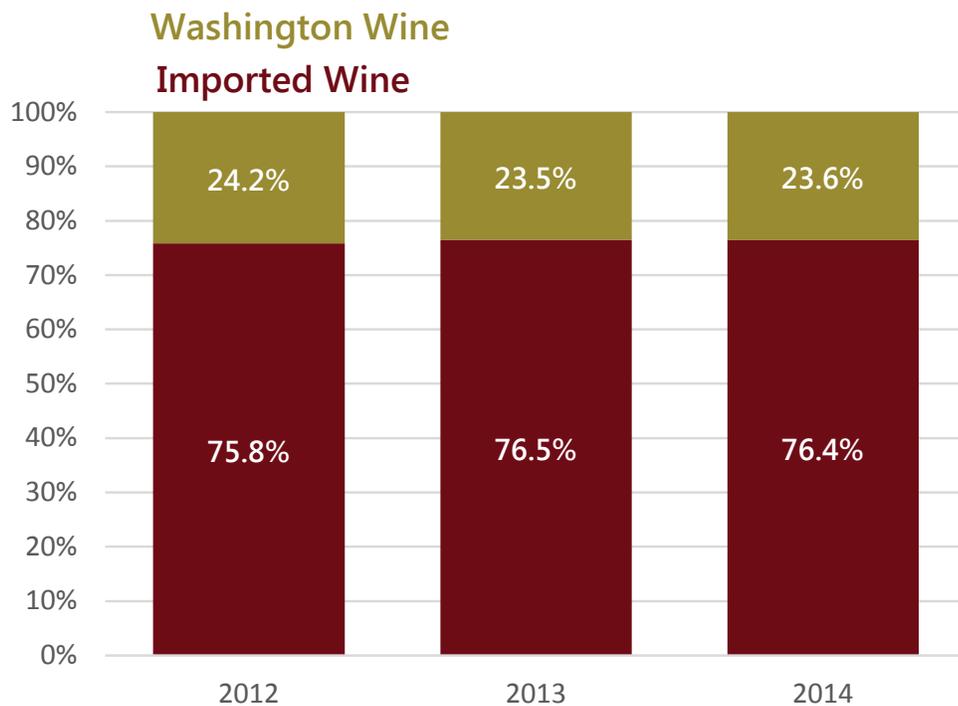


Sources: The Wine Institute, 2014; Fredrikson & Associates, 2014.

<sup>1</sup> Gallup Consumption Habits Poll, 2014. <http://www.gallup.com/poll/163787/drinkers-divide-beer-wine-favorite.aspx>

Sales of Washington State wine as a share of total sales of wine in Washington have decreased slightly from 24.2% in 2012 to 23.6% in 2014 (**Exhibit 3.2**). During this period, sales of Washington State wine increased in absolute terms, but sales of imported wine increased slightly faster. Interviewees suggested that Washington State wine currently has one of the highest quality-to-price ratios in the world, due mostly to a much lower cost of land for vineyard owners. It is important to note that this data is based on sales to distributors within Washington, and therefore excludes direct-to-consumer sales, such as wine clubs, sales directly to restaurants, and tasting rooms, which are an important source of sales among smaller wineries.

### Exhibit 3.2 Washington State Wine as Share of Total Wine Sales in Washington, 2012-2014 Fiscal Years



Source: Washington State Liquor Control Board, 2015.

## 3.2 Challenges to Growth

Wineries that are positioned to scale up often have an established customer base and relationships to support additional sales. For many small winery owners, the goal they had in mind when they decided to start a winery was to produce only a limited quantity of wine, but to produce it to their exact specifications. For these winemakers, expanding production is often contrary to the control they wish to exercise over the winemaking process, discouraging them from increasing production. Equipment needed for boutique and large-scale production operations are often different, making it more difficult to switch from boutique production to larger-scale production.

Experts at the Northern Grapes Project, a United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA)-funded program supporting grape growers in the northern portions of the contiguous United States, counsel winemakers to consider custom crush, renting a tasting room, or keep expanding their current portfolios of wine by purchasing grapes, when considering an increase in wine production. These options represent the most accessible ways for winemakers to scale up.

### **Grape Availability**

For wineries that are both positioned to scale up and are helmed by winemakers who wish to increase production, the next step is identifying limiting factors in their wine-making process. Grape availability is a common limiting factor, and is a reason why some wineries do not reach their maximum production.

Wineries that need to dramatically increase grape input to scale up production will often turn to purchasing or planting their own vineyard rather than simply purchasing more grapes. This is largely because vineyard owners typically engage in multi-year contracts, meaning there is a limited quantity of wine grapes each year that is not already contracted. For winemakers who anticipate a need for more grapes far into the future, planting or purchasing a vineyard can be preferable over trying to negotiate contracts for significantly more grapes each year. The owners of Dunham Cellars and Vin du Lac winery, for example, chose to plant estate vineyards to increase their production of wine.

Wineries that have sufficient wine grapes to produce the upper limit of wine at their winery face a different dilemma: how to increase production space. Some wineries, like Vin du Lac, choose to simultaneously increase grape input and production capacity. Others, like Facelli and Fielding Hills wineries, only needed to increase production capacity.

### **Cooperage**

Cooperage refers to barrels used for wine ageing. Barrels cannot be used indefinitely; the barrel influence imparted on wine declines as the barrels are used, thus barrels are replaced every few years. Because barrels are directly tied to production volume, economies of scale are not easy to achieve. Interviewees revealed there are no coopers currently operating in Washington. As a result, Washington State winemakers must purchase barrels from outside the state.

## Investment Costs

The investment cost of increasing production from a 2,000-case winery to a 5,000 case winery is around \$293,000 in investments and is associated with an additional \$434,000 in operating and fixed costs. On a per-case basis, increasing production from 2,000-5,000 cases is the least expensive in terms of investment costs. Operating costs scale slightly as production is increased, while fixed costs increase in tandem with investment costs. Some investments, once made at the 2,000-case level, do not need to be supplemented significantly as the winery increases production. Material handling, which includes pallet jacks, hand carts, forklifts, and pickup trucks, is the same for wineries from 2,000 cases to 20,000 cases (**Exhibit 3.3**).

### Exhibit 3.3 Investment Costs for Incremental Production Increases, 2014 Dollars

Category	2,000-5,000	5,000-10,000	10,000-15,000	15,000-20,000
Plant, Office, and Tasting Room	\$110,300	\$397,100	\$342,200	\$274,500
Cooperage	\$91,600	\$152,800	\$152,500	\$152,600
Fermentation and Storage	\$29,400	\$5,300	\$21,100	\$105,400
Refrigeration System	\$22,400	\$38,500	\$37,000	\$56,600
Receiving, Cellar, and Material Handling Equipment	\$39,400	\$18,700	\$25,400	\$18,400
Investment Costs	\$293,000	\$612,200	\$578,200	\$607,600

Sources: Washington State Liquor Control Board, 2015; Community Attributes Inc., 2015.

## Land

Because many wineries locate on land that is not suitable for significant expansion, it is more common for a winery to increase production by opening an entirely new facility. In cases like these, the winery faces the same investment costs it did when it originally opened. All categories of investment costs scale with size except for cooperage, as the number of barrels required are directly related to the quantity of wine produced.

## Operating Costs

Operating costs faced by wineries scale slightly as production increases. On a cost-per-case basis, the operating costs faced by a 20,000-case winery are 5.9% lower than for a 2,000-case winery. Costs of marketing and part-time labor per case become less expensive as production increases, while this is not necessarily the case for full-time labor and packaging costs. The switch from primarily part-time to primarily full-time labor from smaller to larger wineries is largely responsible for this. According to one interviewee, “a trained workforce is the number one constraint to growth.” Even for winery owners who wish to expand, it can be difficult to find skilled labor to meet growing demand. Fixed costs—like maintenance, property tax, and insurance—become less expensive on a cost-per-case basis; costs are 41.8% lower for a 20,000-case winery than for a 2,000-case winery.



# 4

## Wine Industry Cluster Metrics



# FOUR WINE INDUSTRY CLUSTER METRICS

This section reviews measures of wine and grape production and associated activities in Washington State, including revenues, jobs, and wages. Metrics include:

- Tons of wine grapes produced over time by variety,
- Price per ton of wine grapes,
- Volume and value of wine produced,
- Winery revenue,
- Total value of grapes sold by vineyards, and
- Jobs and wages for covered employees, and the self-employed.

## 4.1 Wine and Wine Grape Production

### Wine Grapes

Wine grape production in Washington has steadily increased over the past several decades, with an acceleration in production between the early 1990s and today. Planted acres grew from 11,000 in 1993 to more than 50,000 in 2013. The number of wineries in Washington has grown from 800 in 2013 to 850 in 2014.

Between 1990 and 2013, tonnage of wine grapes produced grew at compound annual growth rate (CAGR) of 7.6% (**Exhibit 4.1**). Production rates are sensitive to a variety of factors, most notably climatic conditions. Drier years, while reducing total crop output, can make the remaining grapes more valuable. According to interviewees, years with poor production due to low rainfall, fewer than average growing degree days (a measure of days with temperatures suitable for vine and grape growth) or other climate conditions often result in higher quality wines, as poor growing conditions often concentrate flavors in the lower number of grapes produced per vine. Freezing, on the other hand, does not have a similar effect. Some killing freezes only kill young buds while others can kill entire vines.

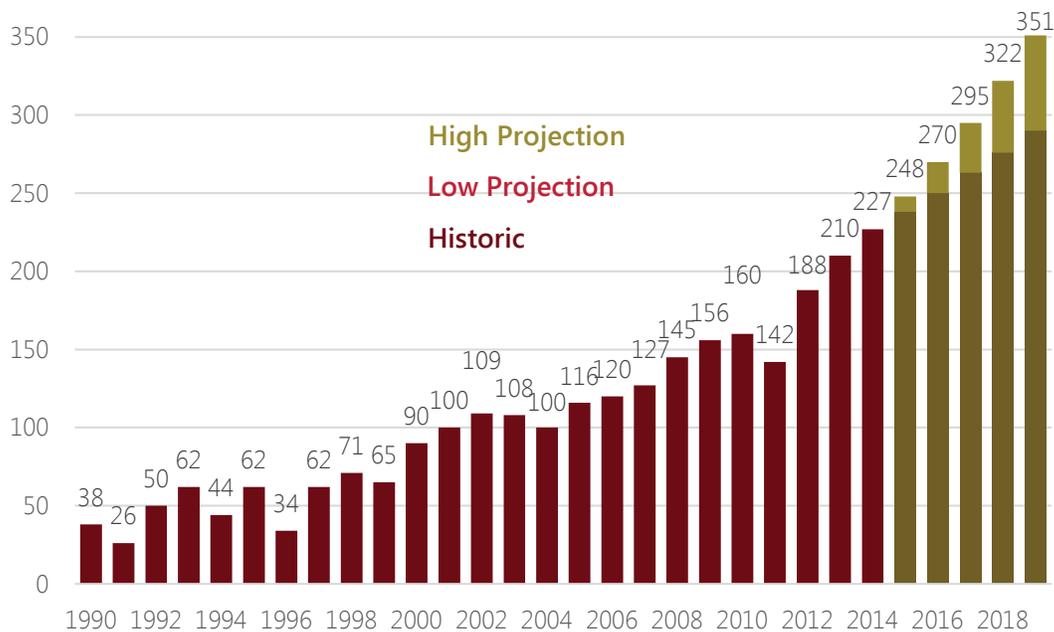
Vines typically take three to four years to bear harvest-worthy grapes. Pruning of fruit-bearing vines in the second year of growth is often done to improve the following year's harvest, and vines take up to five years to produce a full crop of grapes. The time and costs involved in establishing fruit-bearing grape vines acts as both a buffer against replanting established vineyards when grape prices are low and planting new vineyards.

Based on the growth rate of wine grapes produced and preliminary 2014 production numbers, Washington State wine grape production is expected to exceed 300,000 tons by 2019. Increases in production from 1990 to 2013 were uneven, with several significant drops in production in 1996, 2004, and 2011. An unusually harsh winter in 1996 resulted in a 45% drop in production. A similarly cold winter in 2004 helps explain the drop from 2003 levels, albeit with fewer expired plants and smaller grapes across the

board. Increases in bearing acreage helped offset losses to production. Another late frost in 2011 resulted in a similar dip in production. Other factors influencing grape production include the number of days warm enough for vines to grow, water availability, and the grape varietal planted. Projected grape production numbers represent production, barring such environmental effects as killing freezes, low annual growing degree days, or compositional changes in varieties planted.

From 2005 to 2014, the state’s wine grape vineyards increased production at a CAGR of 7.7%. Extending that rate forward provides a rough projection of future growth. For that growth to be realized at current yields per acre, the state would need to add approximately 19,000 yielding acres.

**Exhibit 4.1 Wine Grapes Produced, Thousands of Tons, Washington State, 1990-2014 (Historic) and 2015-2019 (Projected)**

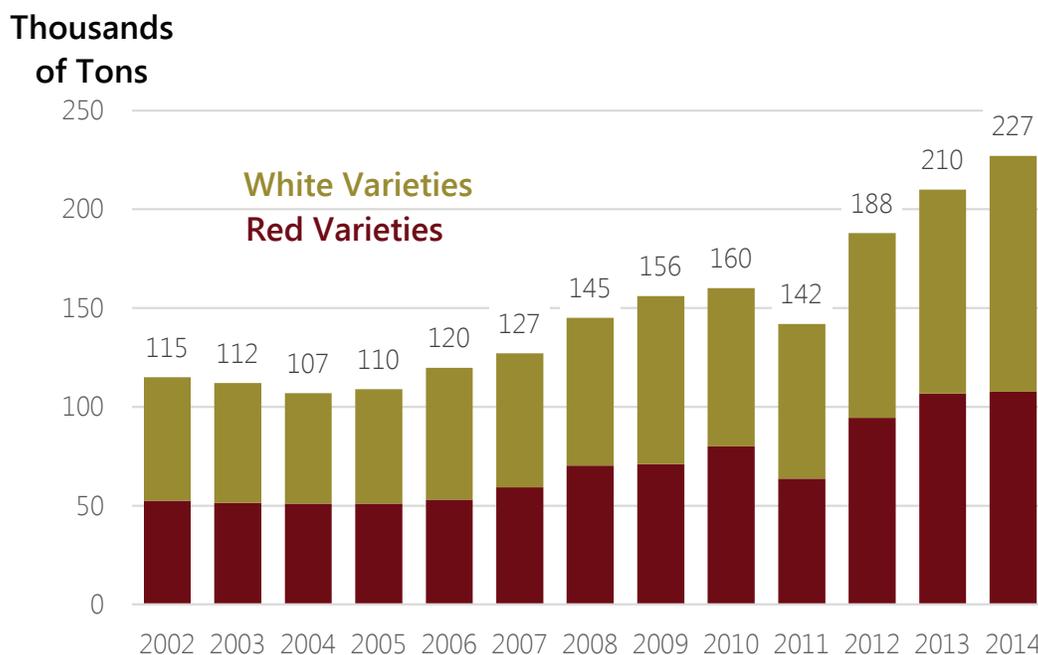


Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Washington State Wine Commission, 2014.

Note: High projected utilization is based on the CAGR for 2010-2014 (9.1%) and low utilization is based on a 5.0% CAGR.

From 2002 to 2014, red grape varietal production increased at a CAGR of 6.2% and white varieties increased at a CAGR of 5.5% with a combined increase in tonnage at a CAGR of 5.8%. The increase in proportion of red varieties is mirrored by the increase in price per ton of red varieties. While red grape varietal production was greater than white varieties in 2012 and 2013, 2014 white varieties exceeded red varieties by 11,600 tons, largely due to an increase in production of White Riesling (**Exhibit 4.2**).

### Exhibit 4.2 Wine Grapes Produced, White and Red Varieties, Thousands of Tons, Washington State, 2002-2014



Source: United States Department of Agriculture National Agricultural Statistics Service, 2015.

White Riesling, the state’s most-produced grape in 2014, increased in production at a CAGR of 11.9% from 2002 to 2014. The most-produced red variety in 2014 was Cabernet Sauvignon (**Exhibit 4.3**).

### Exhibit 4.3 Top Washington-Grown Wine Grape Varieties by Tons Produced in 2014, 2002-2014 CAGR

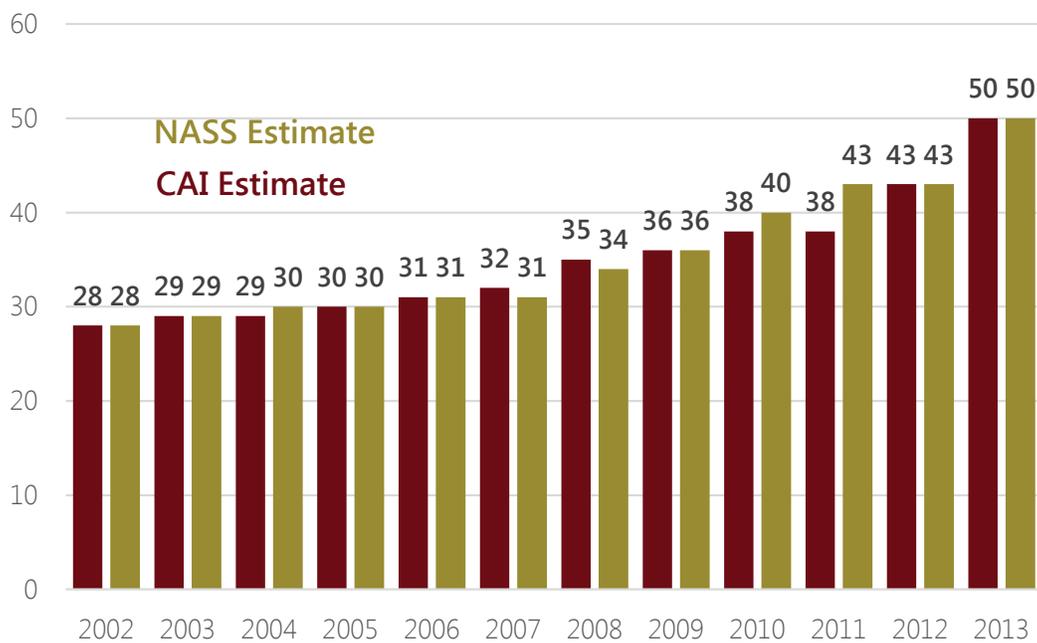
Rank	Varietal	Tons Produced	2002-2014 CAGR
1	White Riesling	50,500	11.9%
2	Chardonnay	43,800	2.2%
3	Cabernet Sauvignon	42,200	7.2%
4	Merlot	36,900	4.6%
5	Syrah	15,400	7.5%

Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2014.

Washington's increase in acres of wine grapes planted since 1993 indicates growth in the industry as a whole, more than doubling by 1999 and nearly doubling again by 2011. Including planting and growing, wine grapes take roughly three years to mature.

**Exhibit 4.4** presents both the National Agricultural Statistics Service (NASS) and Community Attributes Inc. estimates for wine grape acres planted in Washington State from 2002 through 2013. The NASS estimate is based primarily on survey data, with no less than an 80% response rate combined with known data from previous years. The CAI estimate leverages historic yields in Washington State for the state's 18 most-grown varieties and known production data to estimate total acreage. In 2002 and 2006, the Washington State Wine Commission contracted NASS to undertake detailed acreage reports, leveraging infrared satellite images to produce a more detailed estimate of wine grape acreage in Washington State. By 2013 (the latest data available), total planted acreage had exceeded 50,000 acres.

### Exhibit 4.4 Total Acreage Planted in Thousands, Washington State, 2002-2013



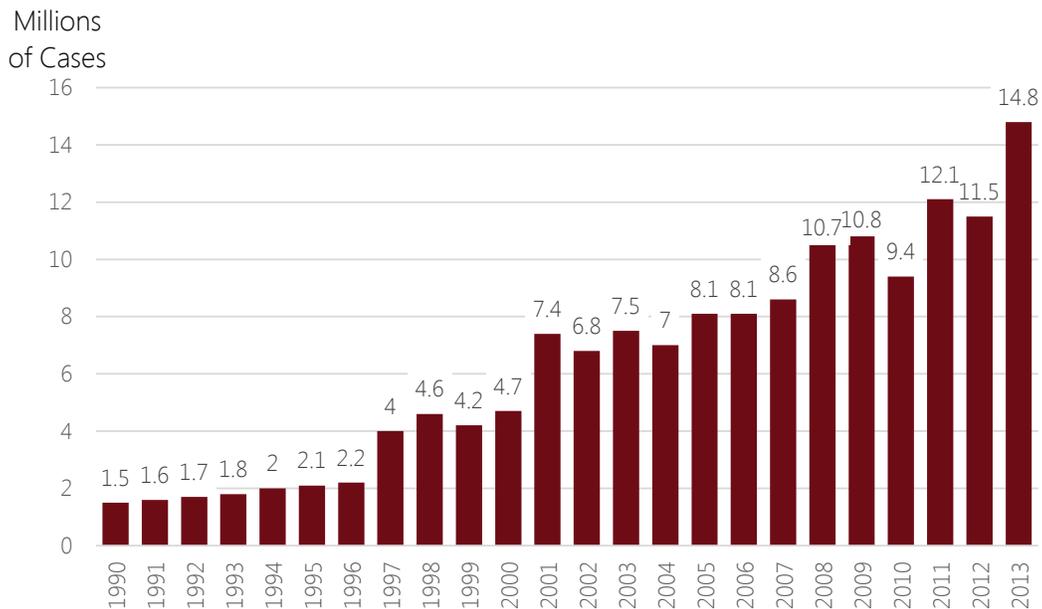
Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2015.

## Wine Production

Gallons of wine produced in Washington have steadily increased in tandem with grape production, rising to a peak of 178 million bottles in 2013, or 14.8 million cases (**Exhibit 4.5**). Washington State wine production and Washington State wine grape production have exhibited some strong correlation in recent years. Often times grape production leads the way, as growers can sell their grapes right away, while it takes time for the producer to make and sell the wine.

Data on wine production by winery is based on self-reporting by wineries to the Washington State Liquor Control Board. Over the course of a year, wine sales do not vary significantly, with peak sales in fiscal year 2014 occurring in December.

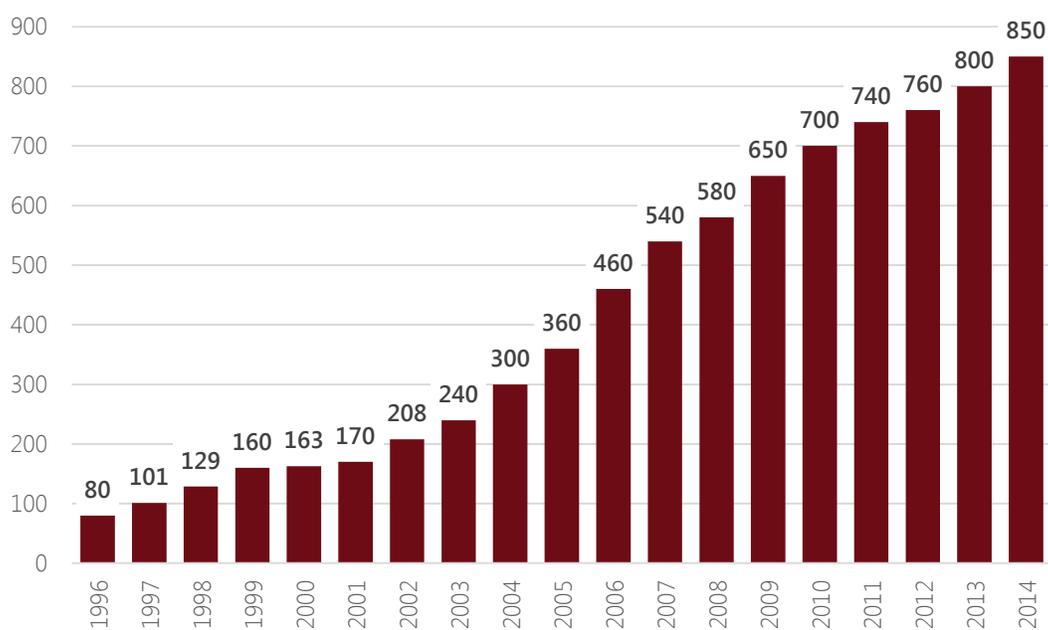
### Exhibit 4.5 Cases of Wine Produced in Washington State, Millions, 1990-2013



Sources: Washington State Wine Commission, 2014; Bureau of Alcohol, Tobacco, and Firearms, 2015; Community Attributes Inc., 2015.

As of 2014, Washington State was home to 850 licensed wineries, up from 80 wineries in 1996, increasing at a CAGR of 14.0% (**Exhibit 4.6**). Not all licensed wineries, however, actively produce wine themselves; many wineries hire other wineries to produce wine according to their own specifications.

### Exhibit 4.6 Licensed Washington State Wineries, 1996-2014



Source: Washington State Wine Commission, 2014.

### Winery Segmentation by Size

Washington’s wine industry is comprised of one major producer (Ste. Michelle Wine Estates), several large producers (e.g., Hogue Cellars, Columbia Winery, Precept), and a majority of small to medium-sized entities. Based on tax incentives disclosure data and known in-state sales, an estimated 64.4% of wineries sold fewer than 1,000 cases in 2013, and 91.3% sold fewer than 20,000 cases (**Exhibit 4.7**). According to interviewees, most wineries producing fewer than 1,000 cases are too small to merit selling through a distributor or wholesaler and rely primarily on direct-to-consumer or “cellar door” sales, though this threshold is an approximation.

### Exhibit 4.7 Licensed Wineries Segmented by Cases Sold in 2013

Category of Sales Volume (cases)	Wineries	Percentage
Less than 1,000	423	64.4%
1,000 to 2,000	62	9.4%
2,000 to 5,000	64	9.7%
5,000 to 10,000	24	3.7%
10,000 to 15,000	17	2.6%
15,000 to 20,000	10	1.5%
20,000 to 50,000	19	2.9%
50,000 to 100,000	3	0.5%
100,000 to 150,000	29	4.4%
150,000 to 200,000	1	0.2%
200,000 to 1,000,000	4	0.6%
More than 1,000,000	1	0.2%

Source: Washington Liquor Control Board, 2015; Washington State Department of Revenue, 2014; Community Attributes Inc., 2015.

Note: not all licensed wineries actively produce in a given year, explaining the sum in the above exhibit, 657, being lower than total licensed wineries.

According to a survey of Washington's wineries (N=81), roughly two out of every five wineries surveyed reported sales of less than \$100,000 in 2014. This aligns with interview feedback describing Washington's wineries as primarily boutique operations with low production and sales.

The top 20 largest wineries by net production constituted 60.3% of all reported net production in 2013. Several large farm operations in the state have diversified their activities to include wine grape growing. Mercer Canyons, a 12,000 acre family-owned farm, for example, operates vineyards in the Horse Heaven Hills appellation in addition to growing traditional row crops like carrots, onions, potatoes, alfalfa, corn, and garlic. Other vineyards produce only wine grapes, and range in size from 12 to more than 1,000 acres planted. Many of Washington's vineyards have their own wineries, termed "estate wineries."

## Washington's Wine Grape and Wine Production in the National Context

Nationally, wine production from 2009-2013 increased at a CAGR of 3.0%. The bulk of wine grape production occurred in the top wine-producing state, California, which accounted for 85% of production in 2012. Washington, the next-largest producer, accounted for 4%.

During this period, California's share of national wine grape production dropped slightly, from 84.8% in 2009 to 83.8% in 2013. Washington's share of national production increased slightly, from 3.6% in 2009 to 4.1% in 2013.

Washington's grape production increased at a compound annual growth rate (CAGR) of 7.7%, while California's production increased at a CAGR of 3.5%, just under the national CAGR of 3.7% (**Exhibit 4.8**).

### Exhibit 4.8 National, California, and Washington State wine Grape Production, Thousands of Tons, 2009-2013

	2009	2010	2011	2012	2013
California Wine Grape Production	3,703	3,589	3,348	4,018	4,245
Washington Wine Grape Production	156	160	142	188	210
National Wine Grape Production	4,373	4,270	4,534	4,706	5,065

Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2015.

In order to better understand the dynamics of growth within the wine industry, wineries were segmented into cohorts based on production levels in 2010 and compared with production in 2013. In 2010, 50 Washington State wineries produced between 1,000 and 2,000 cases each. Over the next three years, 14% of these wineries continued producing between 1,000 to 2,000 cases in 2013 and 14% increased production to more than 2,000 cases. An additional 28% of wineries decreased production to fewer than 1,000 cases. An estimated 44% produced more wine via custom crush operations than they did at their dedicated production facilities, or otherwise reported negative gallons produced (**Exhibit 4.9**).

### Exhibit 4.9 Wineries 1,000-2,000 Cases Produced in 2010 by Production in 2013

2013 Production	Share of Wineries
No production	44%
Between 0 and 1000 Cases	28%
Between 1000 and 2000 Cases	14%
Between 2000 and 5000 Cases	14%

Sources: Washington State Liquor Control Board, 2015; Community Attributes Inc., 2015.

This is supported by survey results: 62.2% reported their production increased in 2014, and 12.2% said their production decreased. This tightened time range—one year as opposed to three years above—combined with a sampling bias toward wineries that are still in business, accounts for the lower portion of wineries with decreased production (**Exhibit 4.10**).

It is important to note, year-over-year, growth was significantly more volatile than is suggested by the change in production from 2010 to 2013 alone.

### Exhibit 4.10 Wineries Whose Production Increased, Decreased, or Stayed the Same in the Previous Year (N=82)

	Responses
Increase	51
Stayed the Same	21
Decreased	10

Sources: Community Attributes Inc., 2015.

In 2010, 66 wineries produced between 2,000 and 5,000 cases of wine each. In 2013, only 30% of those wineries remained in the 2,000-5,000 case production range. One in five wineries increased production to more than 5,000 cases, and 15% decreased production to fewer than 2,000 cases. An additional 24% of these wineries had no reported production in 2013 (**Exhibit 4.11**).

### Exhibit 4.11 Wineries with 2,000-5,000 Cases Produced in 2010 by Production in 2013

2013 Production	Share of Wineries
No production	24%
Between 0 and 1000 Cases	15%
Between 1000 and 2000 Cases	9%
Between 2000 and 5000 Cases	30%
Between 5000 and 15000 Cases	21%

Sources: Washington State Liquor Control Board, 2015; Community Attributes Inc., 2015.

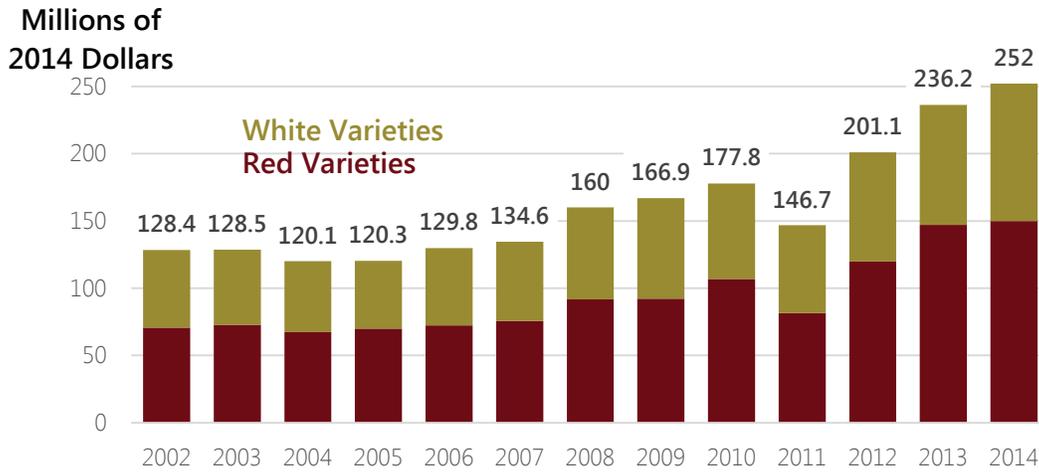
## 4.2 Business Revenues

Business revenues are a key measure of economic activity. Up and down the supply chain, the value of grapes is captured in the final sale price of wine. There is also some degree of vertical integration. Estate wineries, which by definition have their own vineyard, simultaneously represent production of grapes and wine. Similarly, these same wineries may at times purchase grapes for wine production, even if they have their own vineyards. Moreover, entities that are predominately engaged in grape production may have some wine production on-site.

### Wine Grapes

Wine grapes by production value reached \$252.0 million in 2014. The value of red varieties was 40% higher than that of whites at \$143.8 million (**Exhibit 4.12**).

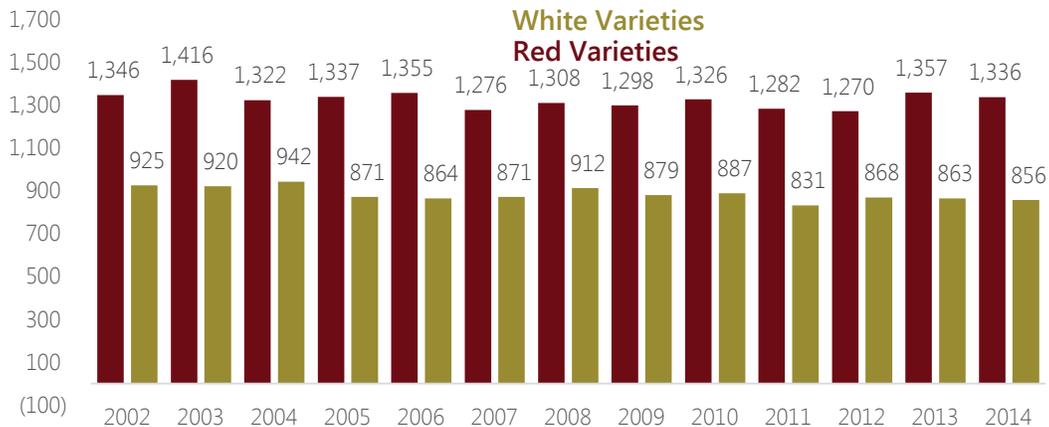
### Exhibit 4.12 Value of Wine Grape Quantities Utilized, Washington State, Red and White Varieties, 2002-2014, Millions of 2014 Dollars



Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2014.

One factor determining total revenue received for grape production is price per ton. Price per ton rests on several major factors, including the year’s yield, availability of desired varieties, and which varieties are most popular with consumers. Red varieties largely commanded the same adjusted price per ton during the 2002-2014 period, while white varieties dropped slightly in average price per ton (**Exhibit 4.13**).

### Exhibit 4.13 Average Price per Ton by Variety, Washington State, 2002-2014, 2014 Dollars



Sources: United States Department of Agriculture National Agricultural Statistics Service, 2015; Community Attributes Inc., 2014.

Washington’s highest price per ton grape variety, Grenache, was also one of the lowest varieties by production, totaling just 900 tons in 2014. Cabernet Franc averaged more than \$1,500 per ton in 2014 (**Exhibit 4.14**).

### **Exhibit 4.14 Top Five Wine Grape Varieties by Average Price per Ton in Washington, 2013-2014, 2014 Dollars**

<b>Rank</b>	<b>Varietal</b>	<b>2013</b>	<b>2014</b>
1	Grenache	\$1,914	\$1,674
2	Malbec	\$1,591	\$1,554
3	Petit Verdot	\$1,613	\$1,513
4	Mourvedre	\$1,695	\$1,511
5	Cabernet Franc	\$1,505	\$1,503

Source: United States Department of Agriculture National Agricultural Statistics Service, 2015.

In Washington State, vineyard owners received the greatest revenues from Cabernet Sauvignon grape sales. Cabernet Sauvignon, a cross between Cabernet Franc and Sauvignon Blanc, is an easy-to-cultivate grape varietal with thick skin that produces full-bodied, tannic wines. In 2013, it accounted for 24.4% of all gross revenues from wine grapes in Washington.

## Exhibit 4.15 Top Five Wine Grape Varieties by Gross Revenues in Washington, 2014, 2014 Dollars

Rank	Varietal	2013	2014
1	Cabernet Sauvignon	\$62,168,787	\$61,684,800
2	Merlot	\$43,270,059	\$42,480,000
3	Chardonnay	\$37,596,793	\$40,383,600
4	White Riesling	\$32,429,438	\$40,349,500
5	Syrah	\$20,033,381	\$19,568,700

Source: United States Department of Agriculture National Agricultural Statistics Service, 2015.

While price per ton was flat for this period, it is important to note that price per ton of Washington State wine grapes is significantly higher than that of California wine grapes due to two major factors. According to interviewees those factors are: the price per ton is largely set by long-term contracts with major wineries, and Washington is primarily producing premium wines and very few bulk wines. California wine grapes sold for \$746 per ton for red varieties and \$620 for white varieties in 2013, 44.3% lower for red varieties and 24.6% lower for white varieties than in Washington. Napa Valley, one of California's premium wine-growing regions, commanded \$4,062 per ton on average in 2014, according to the California Department of Agriculture.<sup>1</sup>

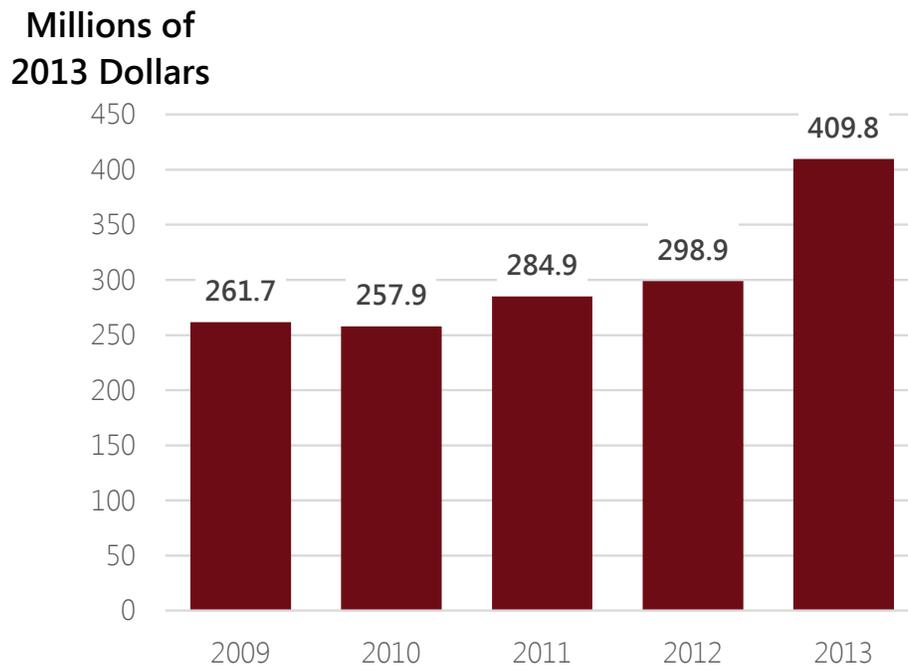
<sup>1</sup> Napa Grape Harvest Sets Earnings Record, Napa Valley Register, [http://napavalleyregister.com/news/local/napa-grape-harvest-sets-earnings-record/article\\_a4413ca6-f173-56c5-ade5-a6935ee7a144.html](http://napavalleyregister.com/news/local/napa-grape-harvest-sets-earnings-record/article_a4413ca6-f173-56c5-ade5-a6935ee7a144.html) February 11, 2015.

## Wineries

Winery revenue is derived from multiple sources. Gross business income (GBI) is a measure of gross receipts, or sales, generated by businesses that are classified by the Washington State Department of Revenue (DOR) as a “winery.” However, in some cases producers are classified by DOR as something other than a winery, such as Ste. Michelle Wine Estates, which is classified as a wholesaler. Moreover, wine sales generated by vineyards are not captured in DOR reported revenue totals. Gross business income thus represents a component, but not all, of wine revenue generated by producers in Washington.

In 2013, Washington State gross business income (GBI) tied to wineries totaled \$409.8 million. This represented a 37% year-over-year increase, adjusted for inflation (**Exhibit 4.16**).

### Exhibit 4.16 Winery Gross Business Income, Washington State, 2009-2013, Millions of 2013 Dollars

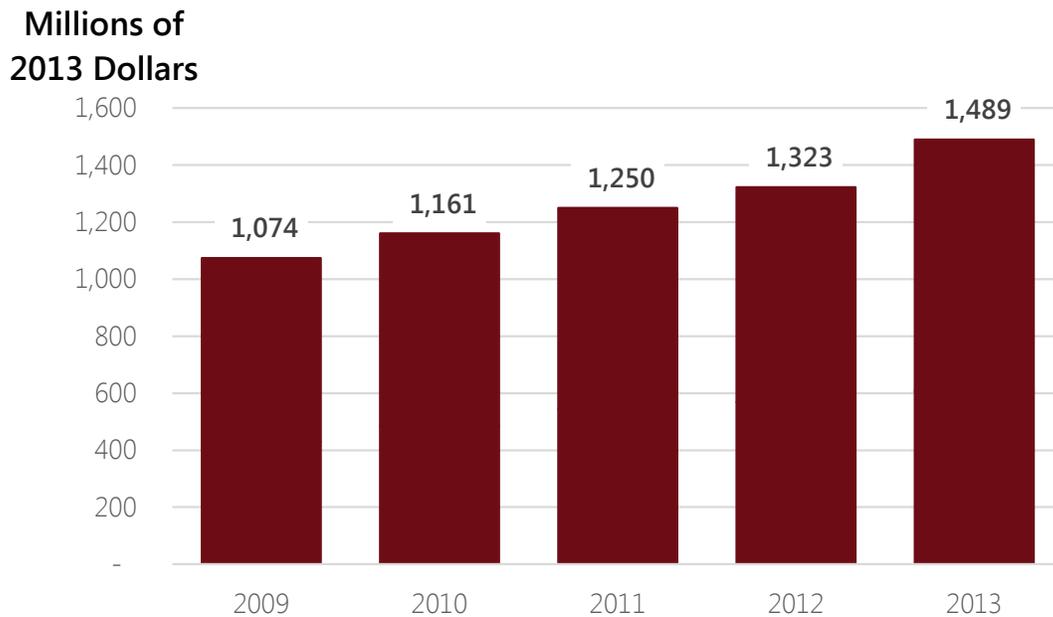


Source: Washington State Department of Revenue, 2015.

Total revenues represent the sum of winery GBI, Ste. Michelle Wine Estates revenue, and additional wine revenues generated by other entities either classified as a vineyard or something other than a winery (e.g. distributor; beer, wine, and liquor stores and wholesalers that also produce and sell wine). Adding up all three components, the wine industry in Washington generated an estimated \$1.5 billion in sales in 2013 (**Exhibit 4.17**).

Wineries across the state maintained consistent production during the 2008-2010 recession. At the same time, vineyards are able to charge consistent prices per ton of wine grapes in addition to producing more grapes over time.

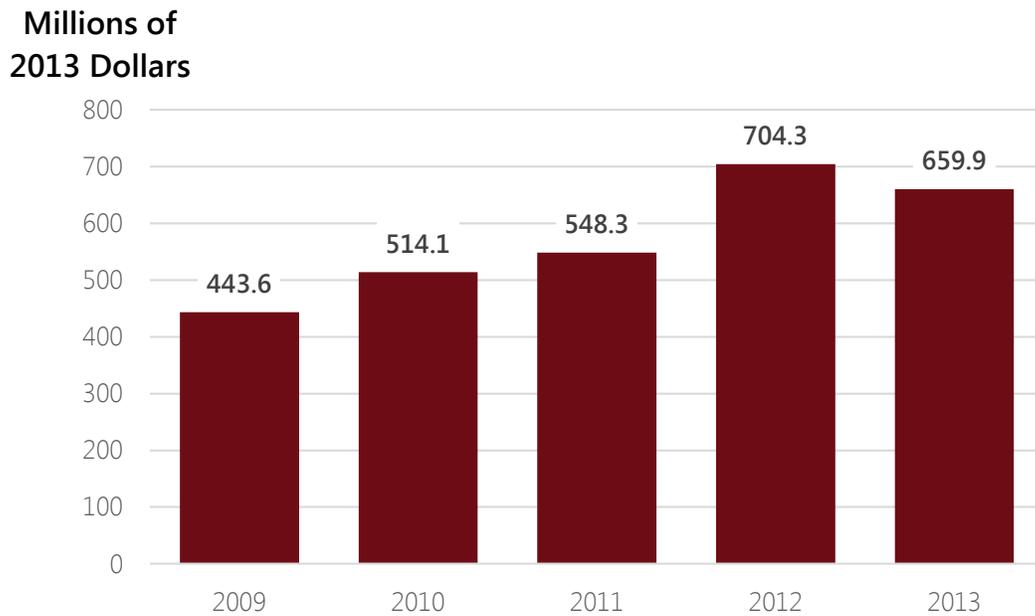
### **Exhibit 4.17 Total Business Revenues, Wineries, Washington State, 2009-2013, Millions of 2013 Dollars**



Sources: Community Attributes Inc., 2015; Altria Group, 2014.

A major source of revenue for wineries is out-of-state sales. In 2013 out-of-state sales generated an estimated \$659.9 million in revenue.<sup>2</sup> This was a slight decrease from 2012, but still 48.7% above out-of-state sales in 2009 (**Exhibit 4.18**). In 2013, 106 wineries reported out-of-state sales, of which the largest included Ste. Michelle Wine Estates (\$533.9 million), Novelty Hill Winery (a custom-crush facility; \$31.0 million), and Charles Smith Wines (\$24.8 million; **Exhibits 4.19** and **4.20**).

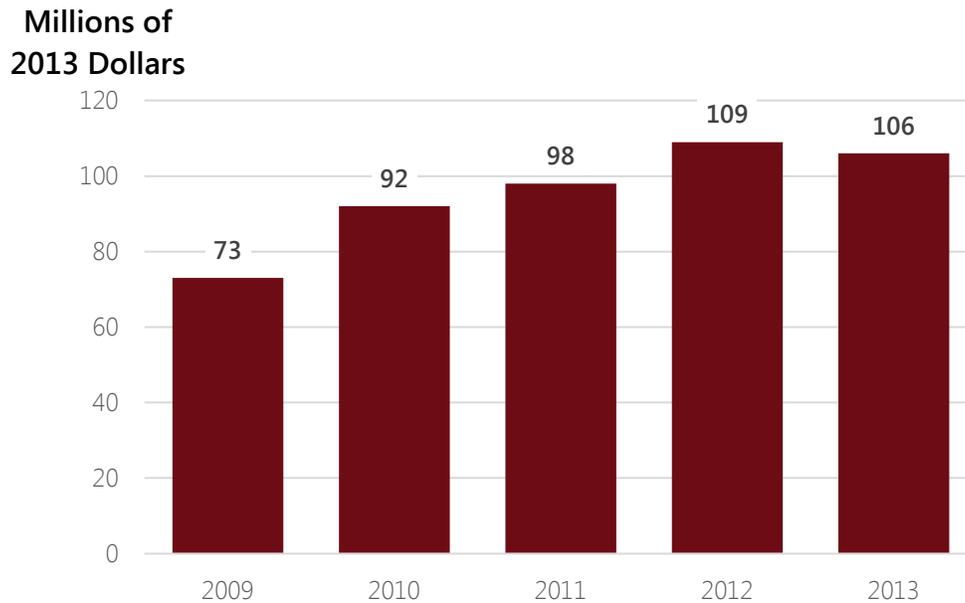
### Exhibit 4.18 Estimated Domestic and International Washington State Wine Sales, 2009-2013, Millions of 2013 Dollars



Sources: Washington Department of Revenue, 2014; Community Attributes Inc., 2015.

<sup>2</sup> Estimates for out-of-state sales were based on Washington State Department of Revenue (DOR) tax disclosure data, which includes estimated tax savings per tax-filing entity in Washington. Savings reflect exempt tax payments, based on the preferential B&O rate for food processing activities in Washington, which includes wine production.

### Exhibit 4.19 Washington State Wineries with Out-of-State Sales, 2009-2013



Sources: Washington State Department of Revenue, 2015; Community Attributes Inc., 2015.

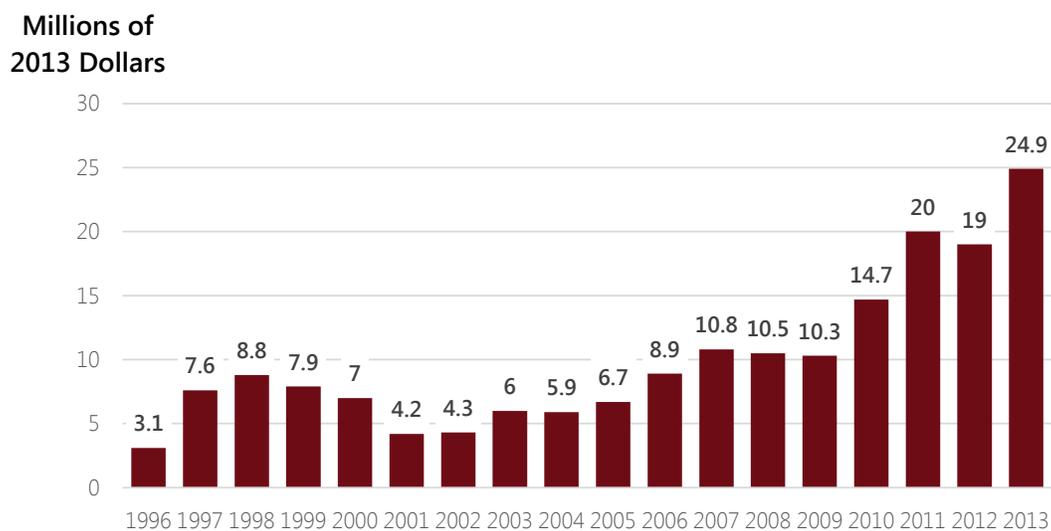
### Exhibit 4.20 Top Ten National and International Exporting Washington State Wineries (or Parent Company), 2013

Rank	Winery or Registered Parent Company	Out-of-state Sales
1	Ste. Michelle Wine Estates	\$533.9
2	Novelty Hill Winery	\$31.0
3	Charles Smith Wines	\$24.8
4	Constellation Brands	\$18.4
5	Karma Vineyards	\$15.8
6	Chandler Reach Vineyards	\$5.0
7	Wahluke Wine Company	\$4.4
8	Trio Vintners	\$4.3
9	Pacific Rim Winemakers	\$2.1
10	Kestrel Vintners	\$2.0

Sources: Washington Department of Revenue, 2014; Community Attributes Inc., 2015.  
 Note: Constellation Brands is the parent company of Hogue Cellars.

While exports are a small share of total wine revenues, foreign exports of wine from Washington have grown in recent years. From a low of \$4.3 million in foreign sales in 2001 (expressed in 2013 dollars), in 2013 Washington State wineries generated \$24.9 million in exports—a compound annual growth rate of 16.0% (**Exhibit 4.21**). The largest foreign markets for Washington State wine in 2013 included Canada (29.3), Denmark (9.4%), and Japan (9.0%), and \$1.2 million in sales to China (**Exhibit 4.22**).

### Exhibit 4.21 Washington State Wine Exports, 1996-2013, Millions of 2013 Dollars



Sources: Washington State Department of Commerce, 2015.

## Exhibit 4.22 Top Ten Washington State Wine Export Markets, 2013, Millions of 2013 Dollars

Rank	Country	2013 Sales (mils \$)	Share of Total Export Sales
1	Canada	7.3	29.3%
2	Denmark	2.3	9.4%
3	Japan	2.2	9.0%
4	Germany	1.9	7.7%
5	Finland	1.5	5.9%
6	China	1.2	4.6%
7	Sweden	1.0	4.2%
8	Israel	1.0	4.2%
9	South Korea	1.0	4.1%
10	Switzerland	0.6	2.4%

Sources: Washington State Department of Commerce, 2015.

### Additional Revenues

In addition to grape sales, wine production supports downstream economic activities, and activities tied to tourism. Once wine is produced, the vast majority is sold to wholesalers who then sell Washington wine to restaurants and retailers in Washington State and elsewhere. At each level of transaction—from wholesaler to restaurant or retail outlet, and from the latter to the final consumer—a mark-up is added to the price per bottle. This mark-up represents value-added revenues in addition to the underlying value of the wine as originally sold from the winery to the wholesaler.

In 2013, an estimated \$714.4 million in additional revenues were generated through mark-ups downstream from wine production. For example, each transaction from a wholesaler to either a restaurant or retail outlet in Washington included an estimated 30% mark-up per case above the price the wholesaler paid to the Washington winery. Based on interviews and the U.S. Benchmark Input-Output Table, wholesalers in Washington on average made 80% of their wine sales by value with retail outlets, and the remaining 20% with restaurants, bars, hotels, and other accommodations.

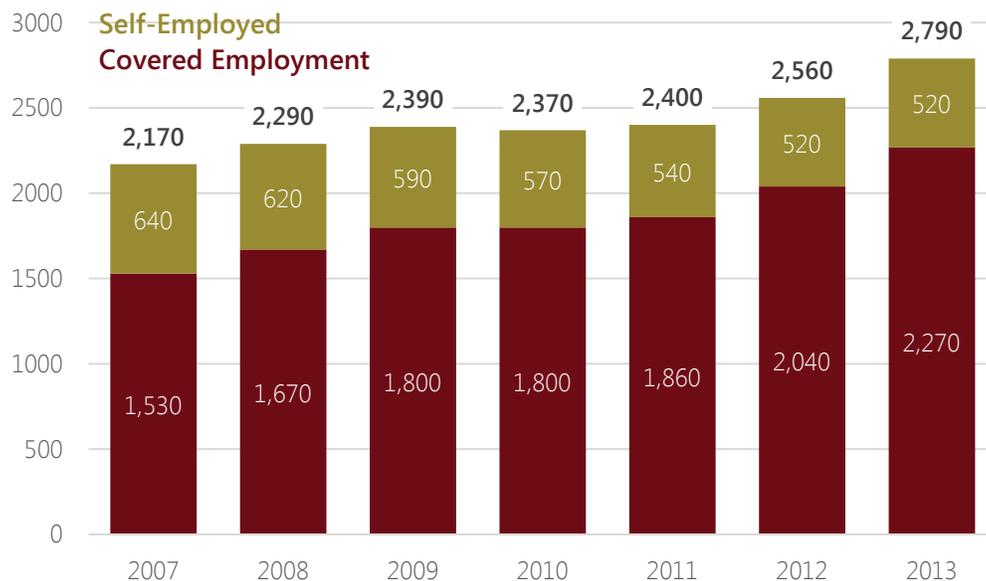
Retailer sales to final consumers included an additional 30% mark-up, resulting in final mark-up revenues of Washington State wine of \$223.1 million. Restaurants charge an estimated 150% mark-up on top of the price per bottle purchased from the wholesaler, resulting in mark-up revenues of \$278.5 million in 2013.

Another important source of wine-related revenues is tourism, discussed further below. Tourists who come to Washington primarily to visit wineries spend disposable income on hotel accommodations, travel expenses, food, gifts, and other retail items, in addition to wine purchases made directly at the wineries they visit (and thus captured under wine revenues above). In 2013, wine tourists spent an estimated \$252.6 million in non-wine purchases in Washington State, helping to support rural communities across the state.

## 4.3 Jobs

Vineyard employment has increased in tandem with vineyard acreage, albeit at a slightly slower rate. Average annual vineyard employment approached 2,800 in 2013, more than double 1994's vineyard employment (**Exhibit 4.23**). The increasing ratio of vineyard acres to vineyard farmers can be attributed in part to increases in harvesting and planting technology and equipment. CAGR overlays employment, revealing two main bursts in growth. From 1996 to 1998, employment increased at a CAGR of 9.6% before dropping back down to 1997 levels. The period of 2006 to 2009 also shows a marked increase in vineyard employment, with a CAGR of 7.4% followed by a brief leveling off period during 2010 and 2011.

**Exhibit 4.23 Wine Grape Vineyard Estimated Annual Employment, Washington State, 1994-2013**

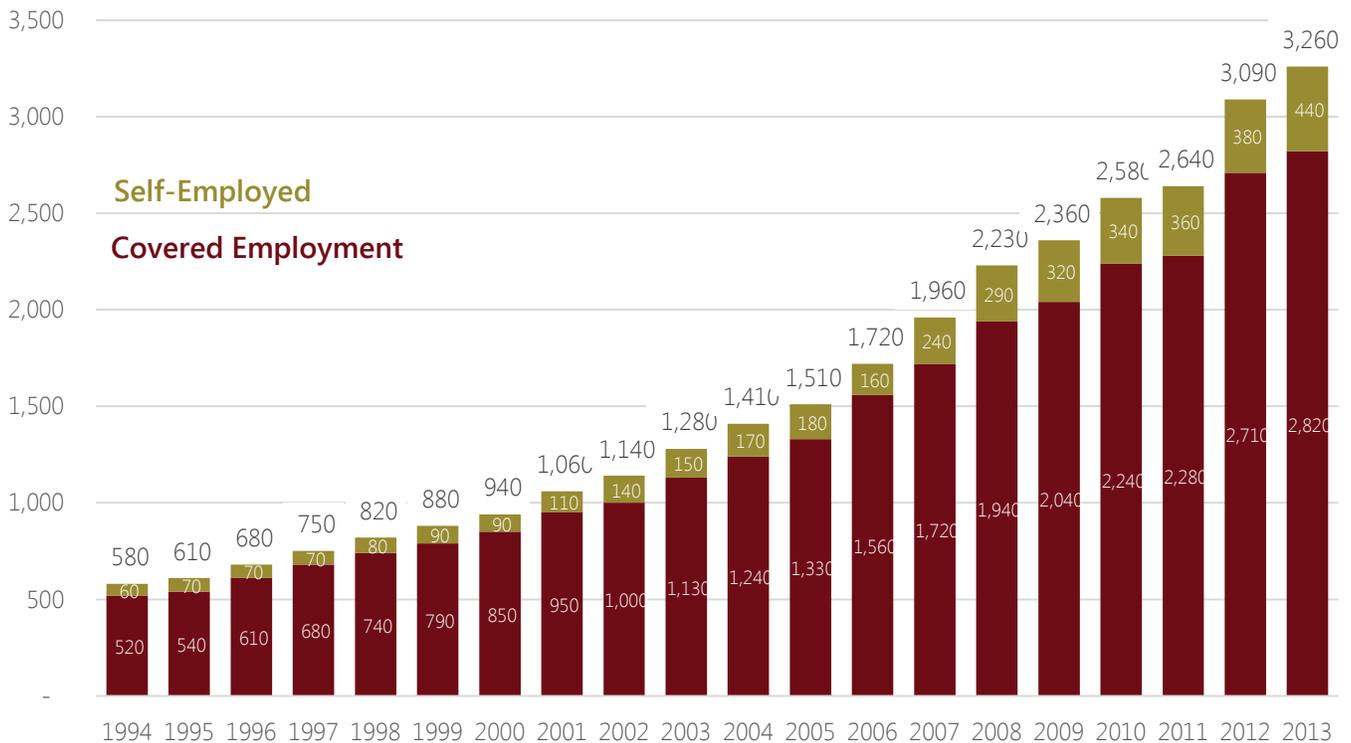


Sources: Washington State Employment Security Department, 2014; U.S. Bureau of Labor Statistics, 2014; Community Attributes Inc., 2015.

While an annual average of 2,790 workers were employed by Washington’s wine vineyards in 2013, many more individuals were employed at some point during the years by vineyards. During the peak harvesting season, wine vineyard employment increases due to the labor-intensive activities involved in harvesting. At the peak of wine grape harvesting (June, July, or August depending on the year’s weather), vineyards employ up to 50% more workers.

Washington State winery employment reached 3,260 workers in 2013, up from 580 in 1994, illustrating the rapid growth of the industry in Washington. Winery employment includes proprietors (440) and covered workers (i.e., workers on payroll) totaling 2,820 jobs in 2013 (**Exhibit 4.24**).

**Exhibit 4.24 Estimated Total Employment in Washington State wineries, 1994-2013**

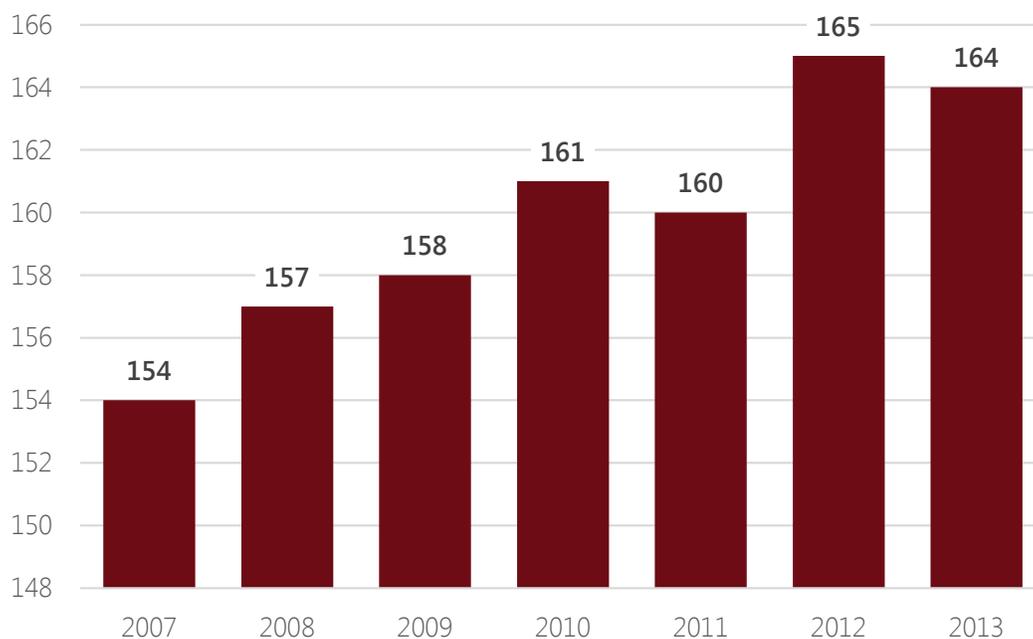


Sources: Washington State Employment Security Department, 2014; U.S. Bureau of Labor Statistics, 2014; United States Department of Agriculture National Agricultural Statistics Service, 2014; Community Attributes Inc., 2015.

## 4.4 Wages & Income

Payroll establishments, those that pay a portion of an employee's pay for state unemployment insurance, are a subset of total establishments in the state. There are 164 wine vineyard payroll establishments in the state, and more than 100 additional non-employer vineyards in the state (**Exhibit 4.25**).

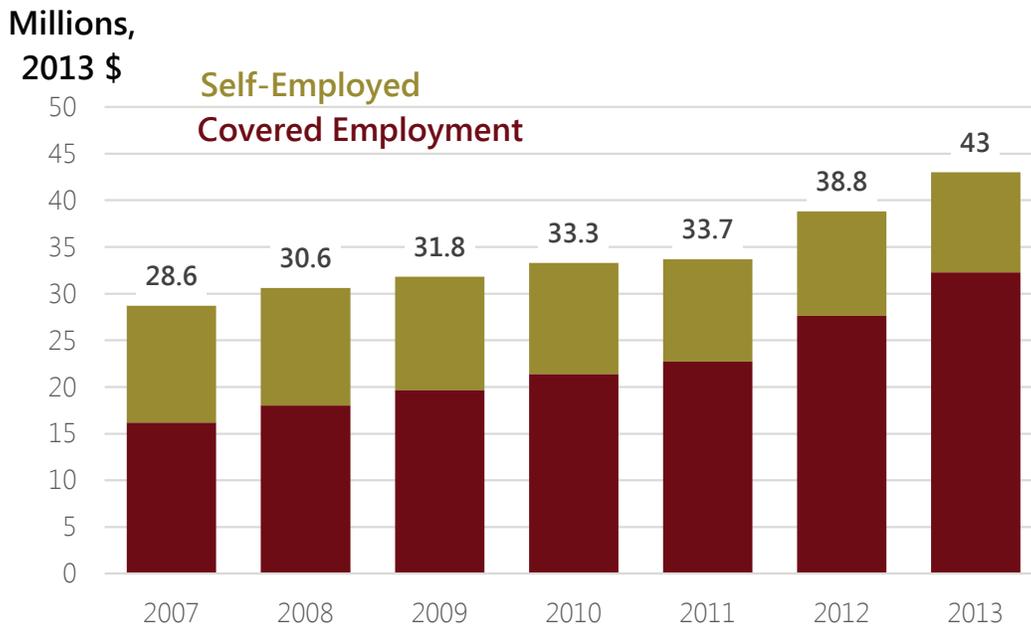
**Exhibit 4.25 Washington State Wine Vineyard Payroll Establishments, 2004-2013**



Sources: Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; United States Department of Agriculture National Agricultural Statistics Service, 2014; Community Attributes Inc., 2014.

Wages paid to covered employees at vineyards exceeded \$152 million in 2013, up from \$36 million in 1994, a CAGR of 7.45%. Total wages paid to vineyard employees from 1994-2013 are shown in **Exhibit 4.26**. Adjusted for inflation, average wages over the 2007 to 2013 period increased at a CAGR of 2.6%.

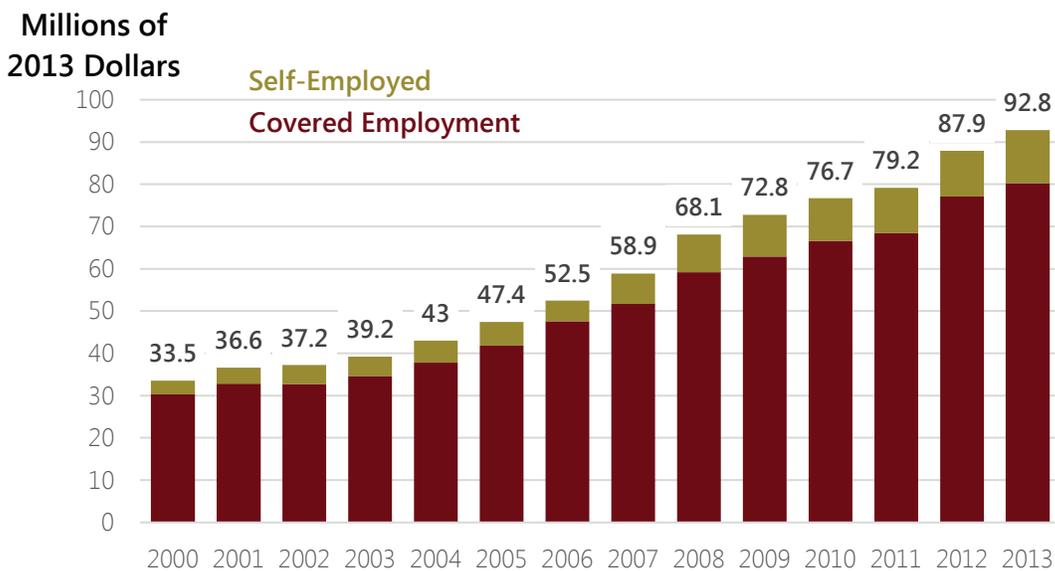
## Exhibit 4.26 Washington State Wine Grape Vineyard Wages Paid, 2007-2013, Millions of 2013 Dollars



Sources: Bureau of Labor Statistics, 2014; Community Attributes Inc., 2014.

Total wages paid out to Washington winery employees summed to \$92.8 million in 2013 (**Exhibit 4.27**). The average wage paid to those winery workers was \$28,400 per year.

## Exhibit 4.27 Washington State Winery Wages Paid, 1994-2013, Millions of 2013 Dollars



Sources: U.S. Bureau of Labor Statistics, 2014; Community Attributes Inc., 2014.



# 5

## Wine Tourism



# FIVE WINE TOURISM

Washington State wineries attract visitors that come to taste and buy wine directly. Visitors include those returning to their favorite winery out of brand loyalty, and others who enjoy sampling a variety of wines and visiting different wineries and vineyards. Some visitors live locally, others come from within Washington, and, increasingly, the state attracts visitors from out of state and overseas, including Japan, China, and South Korea.

From a statewide economic impact perspective, out-of-state visitors spend income earned elsewhere, representing a net inflow of money into the state economy. Winery visitors coming from within the state are important, too, and intrastate tourism has had a major impact on places within the state, most notably Walla Walla and Woodinville and their surrounding areas. Other regions in Washington are increasingly attracting visitors. Wine tourists are discovering Prosser, Yakima, Richland and other places along the I-82 corridor as they trace wine to the vineyards and find wineries that accommodate visitors. Smaller wineries appear all over the state, from the Olympic Peninsula, the San Juan Islands, and places in central Washington from the North Central Cascades to Spokane and Pullman.

## 5.1 Economic Activities Supported by Wine Tourism

Wine industry tourists spend disposable income on wine, accommodations, restaurants, and entertainment—a net inflow of income that translates into additional jobs, wages, business revenues, and taxes. Economic impacts of wine tourism can be quantified in many different ways, including visits to wineries, tourism spending, number of employees, and number of establishments.

Woodinville is the state's most common destination for wine tourists, largely due to its proximity to Seattle and the Puget Sound region. A large number of wineries call Woodinville home, including the state's largest winemaker, Chateau Ste. Michelle. Walla Walla wineries represent the second-largest attractor of wine tourists in Washington. Due to the geography of the region, wine tourists who visit Walla Walla are more likely to stay

in the area overnight and visit, on average, more wineries per trip. Red Mountain, the state's smallest AVA, attracted roughly 27,500 visitors in 2014. The area's rising prominence among wine enthusiasts makes it a destination for many out-of-state tourists, according to interviewees, and as many as one-third of visitors to Red Mountain wineries come from outside of Washington. Together, wine tourists to the state totaled 808,000 in 2014 and accounted for more than 2.1 million winery visits.<sup>1</sup>

Visitors to each of the state's major wine tourism regions have unique spending patterns and preferences. Visitors to Walla Walla may spend more on hotel accommodations and other non-wine spending, compared with visitors to Woodinville, of which a larger share are single-day visitors. Statewide, wine tourists spent an estimated \$193.1 million on related tourist expenses in 2013 (**Exhibit 5.1**).

### **Exhibit 5.1 Washington State Wine Tourism and Spending, 2013**

Unique wine tourists	808,000
Total winery visits	2.1 million
Total tourism-related spending (mils \$)	193.1
Jobs supported by wine tourism	1,800

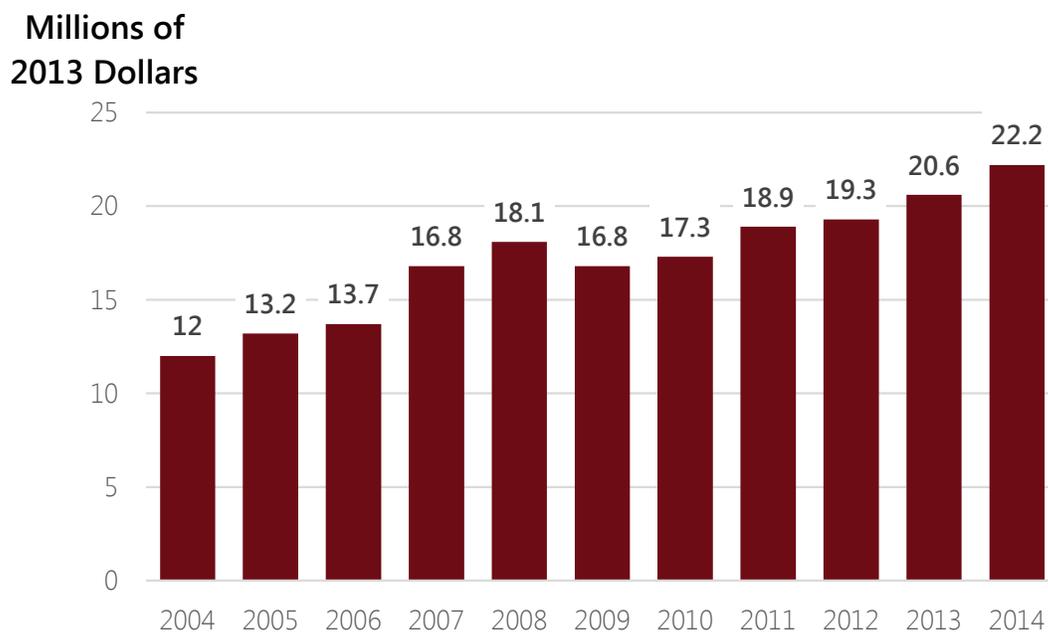
Sources: Community Attributes Inc., 2015.

<sup>1</sup> This figure represents a total number of winery visits, including visits to multiple wineries by the same tourist, which is often the case. Spending patterns on hotel accommodations and other related purchases are thus based on the estimated number of unique visitors, not winery visits.

Taxable hotel accommodations are one important measure of wine tourist spending, though this largely depends on the nature of visits to a region. For example, the majority of visitors to Walla Walla stay overnight, given the distance between Walla Walla and major population centers such as Seattle and Portland. From 2004 to 2014, taxable retail sales for lodging in Walla Walla increased at a CAGR of 6.4% (**Exhibit 5.2**).

Conversely, Woodinville draws most of its visitors from residents within the greater Seattle region. These visitors most commonly visit the region for a day trip, thus having a much lower spending impact on hotel accommodations.

### **Exhibit 5.2 Walla Walla Hotel Accommodation Taxable Retail Sales, 2004-2014, Millions of 2014 Dollars**



Sources: Washington State Department of Revenue, 2015; Community Attributes Inc., 2015.

## 5.2 How Wineries Attract Tourism

One of the chief ways in which wineries attract tourism is through on-site amenities. Tasting rooms are by far the most common amenity among wineries, with 60.7% of the state's wineries in 2014 making use of them. Retail sales and gift shops give wineries the opportunity to expand revenue through on-site sales. On-site sales are often referred to as "cellar door sales" (**Exhibit 5.3**).

### Exhibit 5.3 Share of Licensed Washington State Wineries with Amenities, 2014

Amenity	Share of Wineries
Tasting Room	60.7%
Retail Sales	38.7%
Picnic Area	22.5%
Gift Shop	15.5%
RV Parking	9.6%
Wedding Facilities	8.5%
Restaurant / Food	6.9%

Source: Washington State Wine Commission, 2015; Community Attributes Inc., 2015.

According to a survey of Washington State wineries (N=97) administered by Community Attributes, 84.5% of wineries had a tasting room. This share is higher than the share of licensed wineries with tasting room endorsements. This could be due to a sampling error, new license endorsements, or wineries that share tasting rooms reporting unique tasting rooms.

### Exhibit 5.4 Washington State Wineries and Vineyards with or without Tasting Rooms, 2014 (N-97)

	Responses
Vineyard	36
Winery	84
Winery with a Tasting Room	71
Winery, no Tasting Room	13

Source: Community Attributes Inc., 2015.

Wineries also host special events to help attract tourists. Most wineries offer regular tasting events and roughly half of the wineries in Washington have exclusive events for wine club members. Additionally, 34.2% of wineries host crush events that offer tourists the opportunity to observe the winemaking process (**Exhibit 5.5**).

### Exhibit 5.5 Share of Washington State Wineries with Attractions, 2014 (N=76)

Attraction	Share
Daily or Weekend Tasting Events	76.3%
Exclusive Wine Club Member Events	56.6%
Picnic/Outdoor Space	50.0%
Holiday or Other Theme Parties	46.1%
Crush Events	34.2%
Winemaker Dinners	31.6%
Restaurant/Food	22.4%
Gift Shop	21.1%
None	13.2%

Source: Community Attributes Inc., 2015.

### Regional Brand

Wineries and tourism are both heavily dependent on regional branding efforts. While California’s Napa and Sonoma AVAs are well known, brands take time to develop and market, and Washington’s wine industry is younger and less established when compared with California.

Still, Washington’s winemakers have focused efforts on promoting the Columbia Valley as a competitor to California’s Napa Valley, and in terms of varieties, Washington’s Rieslings and Cabernets both have a strong brand identity.

Wine tourism and marketing efforts are highly collaborative, rather than competitive. An example of this in Washington is the establishment of wine associations, organizations that serve to promote the region’s wine production, as well as to support vintners and grower interests. Washington’s AVA’s are often affiliated with their own wine association, and wine associations represent a diversity of stakeholders and interests in the wine and agricultural community.

## Agri-tourism

Consumers increasingly desire more knowledge about the production of what they eat and drink, and wineries benefit from this agri-tourism. Aside from tastings and tours, some wineries also offer visitors an opportunity to view winemaking activities up close. Examples of these events include wine crushes, blending activities, and grape picking.

## Wine Trails and Tasting Rooms

Exploring Washington State wines is the main attraction for some visitors, while others happen to be in the area for some other purpose, and take the opportunity to visit a winery. Wine trails and tours recognize that consumers are likely to visit many different wineries at a time, and thus advertise wineries in the area with formal, guided or self-guided tours. While these marketing efforts focus on wineries explicitly, they also highlight accommodations, restaurants, and other cultural amenities in the area, benefiting the region as a whole. According to a survey of 97 Washington wineries, 84.5% of wineries had tasting rooms in 2014.<sup>2</sup>

The Washington State Wine Commission has created an interactive tool that allows visitors to create their own customized wine trail, choosing from wineries or searching by vineyards based on area, winery, or variety of wine. Because wine and food are complimentary, much of the marketing surrounding wine also promotes Washington's unique culinary landscape. Washington's Department of Agriculture has created Savor Washington which offers culinary agri-tourism tours for different regions around the state that highlight food, wine, and other cultural events in the area.<sup>3</sup> Additionally, AVAs and other wine organizations also plan and promote their own localized wine trails.

## Marketing and Promotion

Wineries charge tasting fees usually ranging between \$5 and \$10 to cover costs, but wineries often waive these fees with wine purchases and other promotions. Events such as wine release dinners and auctions, tasting weekends, and concerts, draw tourists and stimulate revenues.

Wine clubs may feature a selection of curated wines from across an AVA, or even the state, such as the wine club at **The Tasting Room**, whose club focuses on promotion of a wide variety of boutique wineries across the state. Participating wineries gain exposure through the wine club they would not otherwise have, and that exposure drives tourism. Other wine clubs are winery-specific, such as **Syncline Winery's** wine club, which gives members access to limited release wines, invitations to events, and free tastings at the winery.

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<sup>2</sup> Based on survey administered by Community Attributes Inc., 2015.

<sup>3</sup> <http://agr.wa.gov/Marketing/SmallFarm/SavorWA.aspx>

Wine clubs and memberships allow wineries to sell more product by segmenting visitors according to their interest in the winery. A connoisseur may pay hundreds of dollars in exchange for yearly shipments of a winery’s reserve wines, access to events, and personalized tours. Customers with less disposable income may choose to pay \$50 for a once-yearly shipment of a single bottle.

Other promotions utilize corporate partnerships to increase wine sales and tourism-related activities. For example, Alaska Airline’s Wines Fly Free promotion allows customers to bring a case of wine from participating wineries in Oregon and Washington checked as luggage, free. The promotion is good for flights from Yakima, Tri-cities/Pasco, or Walla Walla, and includes waived tasting fees at participating wineries. Additionally, Hertz will waive car drop fees to those airports.

According to a survey of Washington State wineries, 47.9% of wineries anticipate spending more than \$5,000 on marketing in 2015. Washington’s wineries pay assessments on sales of wine within the state of Washington equal to \$0.08 per gallon or 1.6 cents per bottle. This money goes to the Washington State Wine Commission, which uses that money to fund viticulture and enology research and to market and promote the state’s wine industry (**Exhibit 5.6**).

### **Exhibit 5.6 Share of Washington State Wineries by Planned Marketing Expenses, 2015 (N=71)**

<b>Spending Range</b>	<b>Responses</b>	<b>Share</b>
\$1 to \$5,000	37	52%
\$5,001 to \$25,000	19	27%
\$25,001 to \$50,000	4	6%
More than \$50,000	6	9%
No Plans to Spend this Year	5	7%

Source: Community Attributes Inc., 2015.

## Events

Crush events such as Yakima Valley's **Catch the Crush** and Woodinville's **CRUSH** are harvest celebrations where each winery offers its own unique events to celebrate the season. Events include grape stomps and tastings, food, live music, and wine tastings. Many wineries use Catch the Crush as an opportunity to discount their wines, waive tasting fees, feature new releases, coordinate dinners with winemakers, and more. Wineries release new wines during spring and fall, and **release events** celebrate and market new wines with dinners, tastings, tours, and parties.

Both single event concerts and series help draw visitors in as well. While some events focus on increasing sales, others such as the **Chateau Ste. Michelle Summer Concert Series** donate net proceeds from the series to a broad range of nonprofit organizations.

Sponsored by the Washington State Wine Commission, **Taste Washington** is the nation's largest single-region food and wine event. Washington State wine plays a central part in this event, which includes seminars and wine and food exhibitors. In 2014, 226 Washington State wineries participated in Taste Washington; Taste Washington 2015 was the 18th year of the event.



Source: WineMag.com, 2015.

## Tourism & Economic Development

Tourism plays an especially important role in economic development efforts as a driver of employment and revenues in rural areas. Tourism revenues not only serve the winery, but the wider regional economy as well. Visitors spend money at restaurants, or on accommodations, and revenues from wineries affect the local economy through taxes, and through their own purchasing of goods and services associated with these visits.

Walla Walla and the Tri-Cities have benefitted from targeted economic development efforts on behalf of the Washington State Department of Commerce through its Innovation Partnership Zones (IPZs). The department created IPZs in 2007 to stimulate the growth of industry clusters and build regional economies in Washington.<sup>4</sup>

Walla Walla's IPZ was granted in 2007, and focused specifically on transitioning from a wheat farming economy to an economy with wine and tourism sectors.<sup>5</sup> A 2011 study suggested the presence of local wineries in the area helped continued growth in new businesses and jobs during the recession.<sup>6</sup> The IPZ received \$725,000 for a viticulture lab at Walla Walla Community College<sup>7</sup>, which houses one of seven enological education programs across the state. A 2011 report to Washington's Department of Commerce found the "Greater Walla Walla areas have seen increased economic development and quality of life due to the emergence and growth of the wine industry cluster."<sup>8</sup>

Tri-Cities' IPZ was granted in 2012, and included \$5 million for the establishment of the Walter Clore Wine and Culinary research and education facility in May 2014. Located in Prosser, the center is a nonprofit organization focused on promoting Washington State wine and food. The Clore Center has a tasting room showcasing a variety of Washington State wines, agricultural exhibits, and a chef's demonstration kitchen.<sup>9</sup>

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4 <http://www.bizjournals.com/seattle/news/2012/04/27/state-gives-135m-to-innovation.html>

5 <http://www.wvcc.edu/CMS/index.php?id=1759>

6 <http://union-bulletin.com/news/2011/dec/01/walla-walla-ipz-report-wine-industry-keeps-local/>

7 [http://www.wedc.wa.gov/Download%20files/2011\\_10\\_26\\_IPZ\\_Table.pdf](http://www.wedc.wa.gov/Download%20files/2011_10_26_IPZ_Table.pdf)

8 [http://www.wvcc.edu/CMS/fileadmin/wine/DOCS/A\\_Report\\_to\\_the\\_Department\\_of\\_Commerce.pdf](http://www.wvcc.edu/CMS/fileadmin/wine/DOCS/A_Report_to_the_Department_of_Commerce.pdf)

9 <http://www.theclorecenter.org/news/walter-clore-wine-and-culinary-center-to-celebrate-grand-opening>

## Wineries and Lodging

As Washington's wine industry draws tourists to the state, hotels, bed and breakfasts, and other types of accommodations have capitalized on the increase in wine-based tourism. **Cave B Inn and Winery** in Quincy first opened as an estate winery named Champs de Brionne in 1984. One year later, the owners opened the Champs De Brionne Music Theater, which later became the Gorge Amphitheatre.<sup>10</sup> In 1993, the owners sold the Gorge, but held onto most of the grapevines and the small winery building, and in 2000, the Cave B Winery and Resort opened. The resort offers suites, yurts, and cavern rooms, and amenities such as a spa and restaurant. The winery produces a wide range of varieties.<sup>11</sup>

Located in Cle Elum, the **Suncadia Resort** has its own winery within the resort. Swiftwater Cellars offers wines including red and white Bordeaux blends, Columbia Valley Syrah, and a Pinot Noir from Oregon's Willamette Valley. **The Inn at Abeja** also combines winemaking and hotel accommodations. Many hotels and resorts around Washington do not have a winery on site, but showcase Washington State wines as a central piece of the accommodations experience. **Willows Lodge** in Woodinville will arrange tours of the many wineries surrounding the area, and its two on-site restaurants feature Washington State wines.

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<sup>10</sup> [http://seattletimes.com/html/pacificnw/2010112425\\_pacificpvines01.html](http://seattletimes.com/html/pacificnw/2010112425_pacificpvines01.html)

<sup>11</sup> <http://www.caveb.com/our-story.php>



# 6

## Economic Impacts of Wine & Wine Grape Production in Washington State



## SIX ECONOMIC IMPACTS

The economic impacts of the wine cluster in Washington State include activities directly tied to wine production, supporting activities including suppliers, and additional benefits generated through the spending of income earned in support of wine production. Economic impact studies model the broader range of economic activities supported through final demand, that is, the final sale of goods and services to households, governments, or as domestic or international exports, along with investment. In the case of wine production, which involves a supply chain of goods and services, final demand reflects revenues generated from the final sale of wine, either to households or distributors along with additional mark-ups earned by wholesalers, retailers, and restaurants. Moreover, wine production activities are also important drivers of tourism activities, supporting final demand sales among hotels, restaurants, and other tourism-related expenses (as discussed in Section 5).

Importantly, as a consequence of estimating final demand, supporting activities and suppliers must be subtracted from total revenues to prevent double counting of the economic impact of wine production. For example, in 2013 wine grape producers generated an estimated \$236.2 million in sales. However, essentially all of these sales were to Washington wine producers. The value of these grapes is thus carried over into the value of wine produced in Washington. In calculating the economic impacts of wine production, these grape growing activities are still captured, but as indirect effects (business-to-business transactions) of wine production. Similarly, agricultural support services, such as soil preparation, are not included in estimated final demand because the value of these services is captured in the value of grape sales.

Based on these adjustments, in 2013 the wine cluster in Washington State produced \$2.4 billion in final demand sales (**Exhibit 6.1**). In addition to \$1.5 billion in final demand sales from wineries, an additional \$714.3 million was generated by restaurant, wholesale, and retail mark-ups, and \$193.1 million in tourism spending.

### **Exhibit 6.1 Washington State Wine Cluster Final Demand Revenues and Direct Jobs and Wages, 2013**

Segment	Revenues (mils \$)	Jobs	Wages (including benefits, mils \$)
Wine Production	1,489.2	3,300	115.5
Wholesale Mark-up	212.8	900	74.6
Retail Mark-up	223.1	2,400	85.1
Restaurant Mark-up	278.5	3,700	74.2
Tourism	193.1	1,800	65.0
<b>Total</b>	<b>2,396.6</b>	<b>12,100</b>	<b>414.5</b>

Source: Community Attributes Inc., 2015.  
 Note: Jobs values rounded to nearest hundred.



Source: Washington State Wine Commission, 2015; Community Attributes Inc., 2015.

Based on the estimate of final demand, in 2013 the wine cluster in Washington supported \$4.8 billion in business revenues across the state (**Exhibit 6.2**). This included \$1.3 billion in business revenues generated by suppliers to wine production and tourism-related activities, such as grape producers. Induced impacts were slightly less than indirect impacts (business-to-business transactions), with \$1.1 billion in business revenues generated by employees among wine producers, tourism-related operations, wholesale and final sale activities, and suppliers spending income throughout the economy.

A total of 25,900 jobs were supported by the wine cluster statewide. In addition to the 12,100 direct jobs, an additional 13,800 jobs were supported in such areas of wine grape production, equipment suppliers, retail and other activities supported by household spending.

### Exhibit 6.2 Total Economic Impact of Wine Production in Washington State, 2013, Millions of Dollars

	Direct	Indirect	Induced	Total
Jobs	12,100	6,400	7,400	25,900
Labor Income (mils 2013 \$)	414.5	368.2	361.5	1,144.1
Revenues (mils 2013 \$)	2,396.6	1,255.3	1,131.5	4,783.3

Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.

Each of the 12,100 direct jobs in the wine cluster was associated with more than two jobs statewide. Similarly, every dollar of final sales was associated with \$2.00 in total business revenues across the state, and each dollar of direct labor income supported a total of \$2.76 in wages statewide (**Exhibit 6.3**).

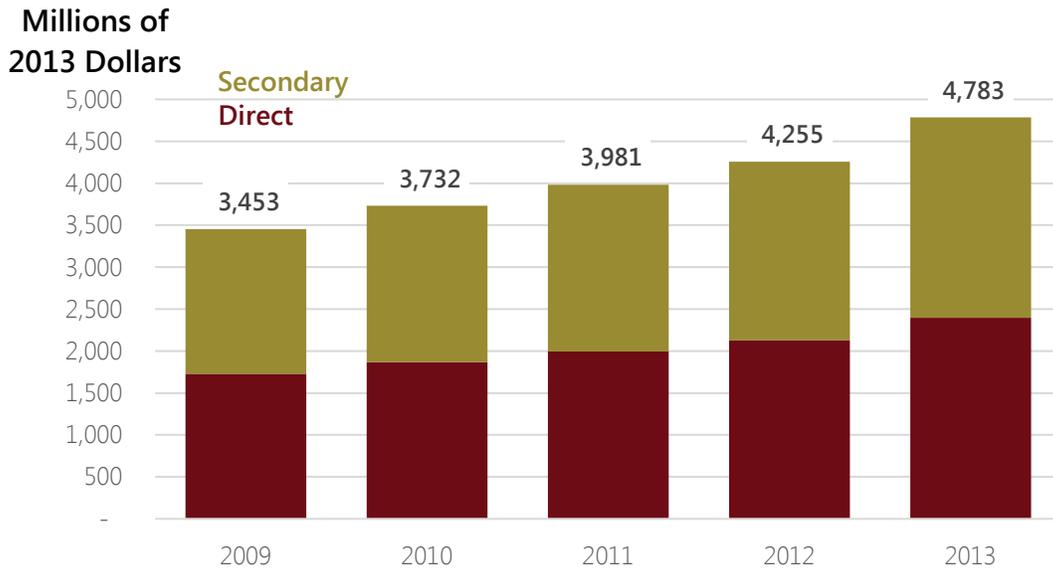
### Exhibit 6.3 Economic Impact Multipliers of Washington State Wine, 2013

Type	Multiplier
Total output per \$ final demand	2.00
Total jobs per direct job	2.14
Total labor income per \$ direct income	2.76
Total jobs per \$ mil final demand	10.81

Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.

The impact of wine and grape production has grown over time. Based on the methodology employed in this analysis, the total economic impact of these activities—measured in business revenues—increased from \$3.5 billion in 2009 to \$4.8 billion in 2013, representing a CAGR of 8.5% per year (**Exhibit 6.4**).

### Exhibit 6.4 Economic Impacts of Wine and Related Activity Production in Washington State, 2009-2013 (Millions 2013 Dollars)

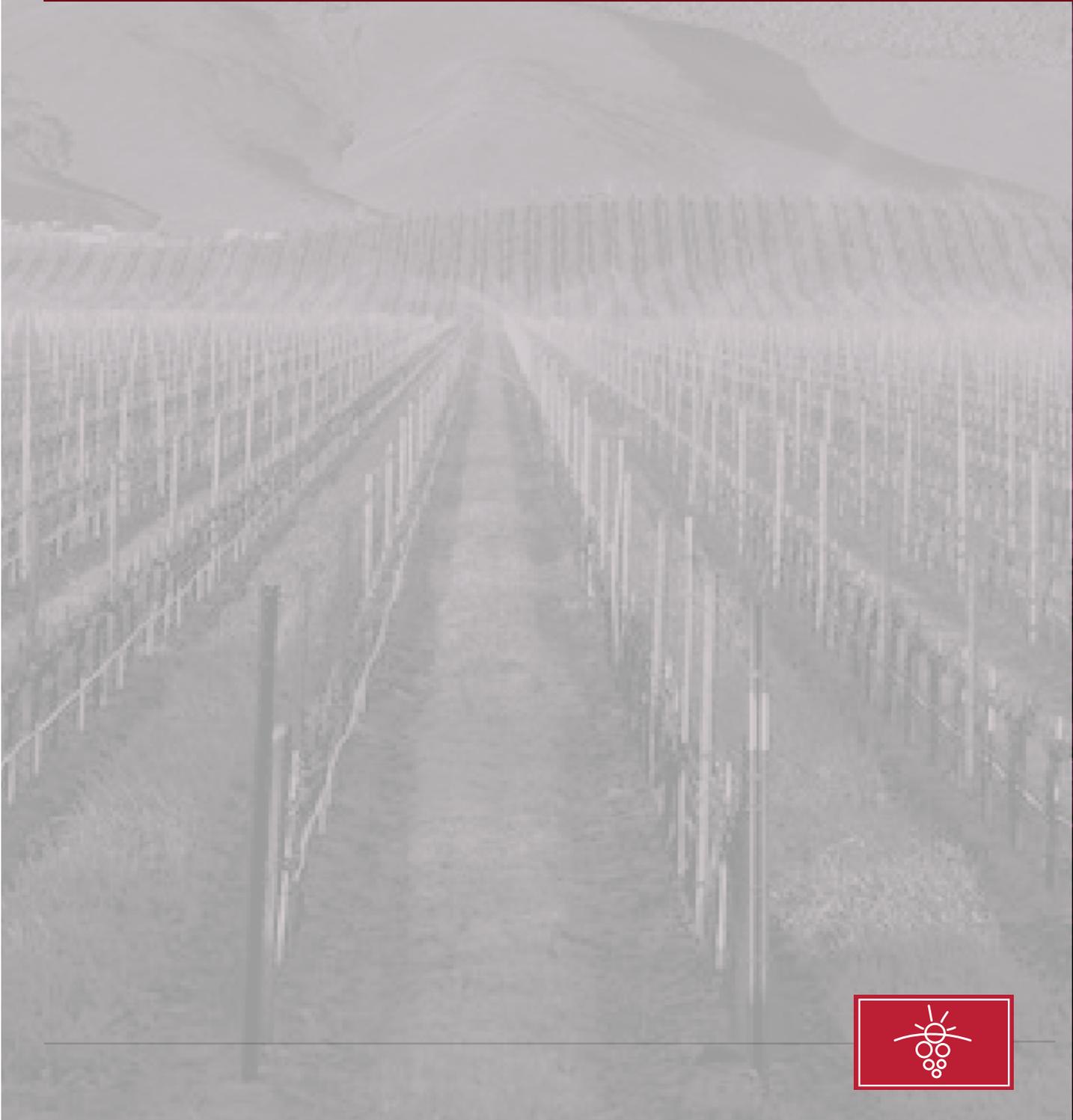


Sources: Washington State Office of Financial Management, 2014; Community Attributes Inc., 2015.



# 7

## Wine Production Activities Across Washington



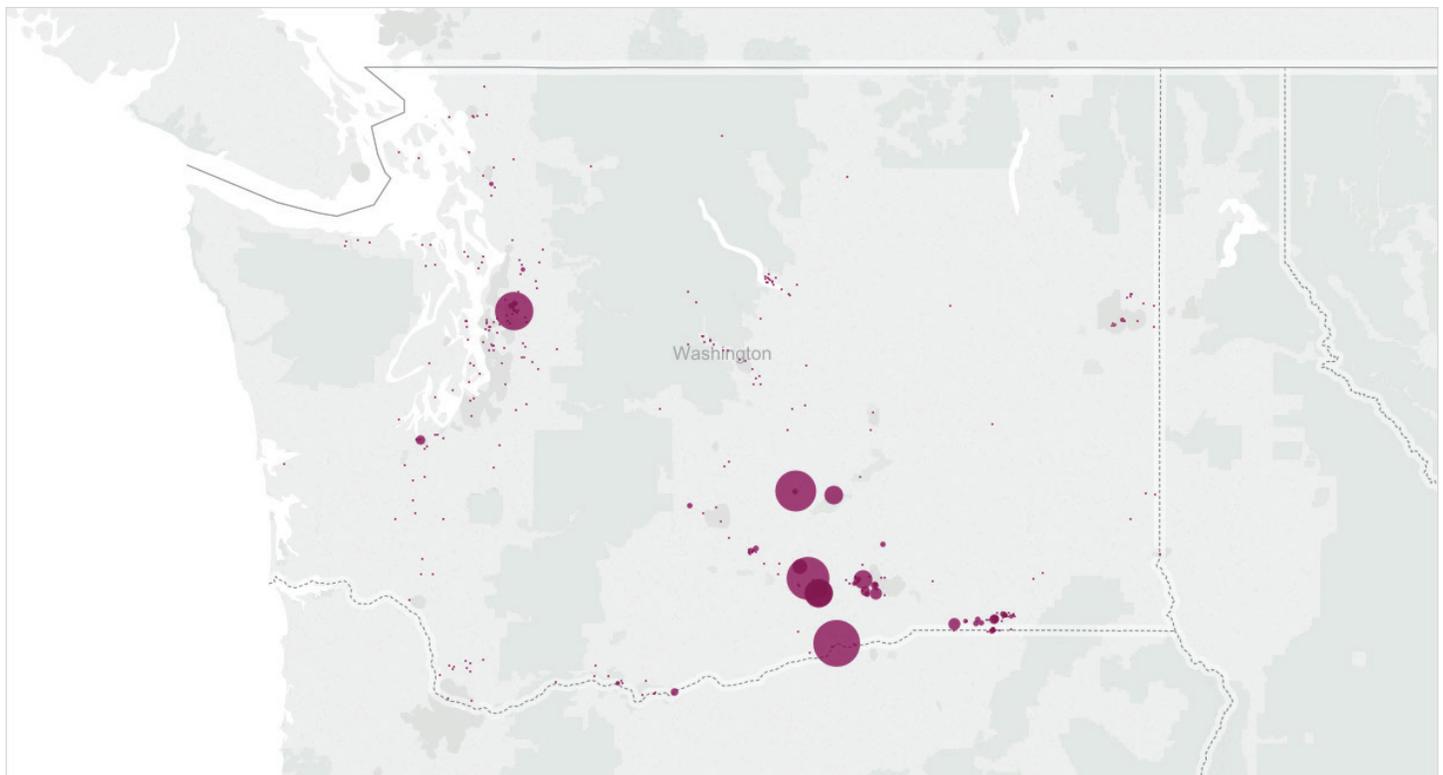
# SEVEN WINE PRODUCTION ACTIVITIES

## 7.1 Wine Production Statewide

Wine production is often—but not necessarily—near the location of grape production. In many instances, including Woodinville, wine production is far removed from the growing location. Individual wineries themselves are located across the state, with individual winemakers choosing locations based on grape availability, water quality, and personal lifestyle choices. The largest wineries have multiple winemaking locations, and some have separate tasting rooms. Ste. Michelle Wine Estates' production is not centered at a single winery, but rather at several sites across the state (**Exhibit 7.1**).

The state's wineries are spread out geographically, but wine production itself is highly concentrated. Benton County's wineries produced just under 9.5 million cases of wine in 2014, beating the second-highest-producing county, King County, by more than 7.2 million cases (**Exhibit 4.29**). Both counties are homes of large production sites for Ste. Michelle Wine Estates, such as the Chateau Ste. Michelle label in Woodinville, which produced nearly 2.8 million cases in 2013.

**Exhibit 7.1 Map of Wineries by Location, Scaled by Estimated Production**



Source: Washington State Wine Commission, 2015; Washington State Department of Revenue, 2015; Community Attributes Inc., 2015.

Benton County is home to the most wine production of Washington’s counties, its wineries producing almost 9.5 million cases in 2014. King County production exceeded 2.2 million cases, largely clustered in the Woodinville area, and Walla Walla County came in third with 1.6 million cases (**Exhibit 7.2**).

## Exhibit 7.2 Top Washington Counties by Wine Production, 2014

Rank	County	Cases
1	Benton County	9,477,000
2	King County	2,208,000
3	Walla Walla County	1,610,000
4	Snohomish County	259,000
5	Klickitat County	179,000
6	Thurston County	168,000
7	Grant County	84,000
8	Chelan County	78,000
9	Yakima County	68,000
10	Spokane County	63,000

Source: Washington State Wine Commission, 2015; Washington State Department of Revenue, 2015; Community Attributes Inc., 2015.

## 7.2 Economic Impacts of Wine by County

The local impacts of wine production vary by the unique supply chain configurations and areas of specialization by county. In order to model these impacts, the Washington State Input-Output Model was customized for four counties with strong concentrations of wine production and related activities, those being: Benton, King, Walla Walla, and Yakima. The following exhibit below present these impacts by county.

### Benton County

Benton County is the largest county for production of wine, with an estimated 9.5 million cases produced in 2014. Along with wine tourist activities and distribution, more than 1,500 workers were employed in wine and related activities in 2013, with total wages (including benefits) of \$50.4 million.

The total impact of wine production and related activities in 2013 summed to nearly 3,200 jobs and \$885.7 million in business revenues (**Exhibit 7.3**).

### Exhibit 7.3 Economic Impacts of Wine and Related Activities, Benton County

	Direct	Indirect	Induced	Total
Jobs	1,520	820	830	3,170
Labor Income (mils 2013 \$)	50.4	42.0	39.9	132.2
Revenues (mils 2013 \$)	594.5	167.7	123.5	885.7

Source: Washington State Office of Financial Management, 2015; Community Attributes Inc., 2015.

#### King County

Wine production activities in King County are primarily concentrated in the Woodinville region, though there are wineries in both urban and rural areas across other regions of the county. The largest segments of the wine cluster in King are in wine production and distribution, with a significant share of total mark-up revenues generated through the sale of wine occurring within the Seattle region as the largest metropolitan region of the Northwest.

In 2013, an estimated \$357.6 million in business revenues were generated by wine and related final demand activities in the county, directly supporting nearly 1,900 workers with a total wage compensation of \$68.8 million. Factoring in supply chain transactions and the spending of wages, a total of more than 3,700 jobs across the county were supported—either directly or through multiplier effects—by the wine industry in 2013 (**Exhibit 7.4**).

### Exhibit 7.4 Economic Impacts of Wine and Related Activities, King County

	Direct	Indirect	Induced	Total
Jobs	1,880	780	1,080	3,740
Labor Income (mils 2013 \$)	68.8	45.6	52.7	167.1
Revenues (mils 2013 \$)	357.6	152.8	162.1	672.5

Source: Washington State Office of Financial Management, 2015; Community Attributes Inc., 2015.

### Walla Walla County

Walla Walla County is the largest region for wine tourism, based on estimates produced for this study. In addition to wine-related jobs, the county has an extensive hospitality and restaurant industry serving wine tourists from across the state and world. In 2013, more than 1,100 jobs were directly supported by direct wine and related activities in the county, with a total jobs impact of more than 1,900 jobs (**Exhibit 7.5**). In other words, for each direct annualized job in wine production, tourism, or distribution within the county, a total of 1.7 jobs were supported across the county. Similarly, each dollar of direct sales in wine and related activities supported—through multiplier effects—an additional \$0.50 in sales among other industries across the county.

### Exhibit 7.5 Economic Impacts of Wine and Related Activities, Walla Walla County

	Direct	Indirect	Induced	Total
Jobs	1,140	390	390	1,920
Labor Income (mils 2013 \$)	27.0	20.3	19.2	66.5
Revenues (mils 2013 \$)	303.9	84.0	59.8	447.7

Source: Washington State Office of Financial Management, 2015; Community Attributes Inc., 2015.

### Yakima County

Yakima County, which contains most of the Yakima Valley AVA, is important to the state wine industry due to its concentration of wine vineyards. Yakima grapes are shipped to winemakers across the state—and across state lines, especially to Oregon, according to some interviewees. Yakima’s employment impact of 490 jobs, \$19.5 million in labor income, and \$126.7 million in revenue understates the county’s importance to the state wine ecosystem; Yakima grapes are essential to the activities of counties with concentrations of wineries. (**Exhibit 7.6**)

### Exhibit 7.6 Economic Impacts of Wine and Related Activities, Yakima County

	Direct	Indirect	Induced	Total
Jobs	250	130	110	490
Labor Income (mils 2013 \$)	7.2	6.7	5.6	19.5
Revenues (mils 2013 \$)	81.9	27.3	17.5	126.7

Source: Washington State Office of Financial Management, 2015; Community Attributes Inc., 2015.



# 8

## Fiscal Impacts of Wine & Wine Grape Production in Washington State



# EIGHT FISCAL IMPACTS

Wine production supports state revenues through both direct payments, such as business and occupation taxes, sales and use taxes, and assessments, and through additional tax revenues drawn from industries and economic activities that are supported through wine production and related activities across the state.

## 8.1 Direct Taxes Paid by the Washington Wine Cluster

In 2013, wineries paid \$10.0 million in direct taxes to the state, of which the largest share was sales and use taxes (\$6.8 million). Between 2009 and 2013, total direct state tax payments have increased at a CAGR of 9.2%, adjusted for inflation (**Exhibit 8.1**).

Winemakers in Washington also pay production-based assessments and other fees to the Washington State Wine Commission equal to \$0.08 per gallon or 1.6 cents per bottle. While this revenue does not go directly to the state, it impacts the state as it is spent in marketing, research, and promotion of Washington State wines. In 2013, wineries paid \$1.7 million in assessments, up from \$1.5 in 2009 (estimates based on fiscal year to calendar year conversion and expressed in 2013 dollars).

### Exhibit 8.1 Direct State Taxes Paid by Washington State Wineries, 2009-2013, Millions of 2013 Dollars

Year	Sales & Use		Wine		Total
	Tax	B&O	Assessments*	Other	
2009	4.3	0.9	1.5	0.0	6.6
2010	4.9	0.9	1.6	0.0	7.4
2011	5.4	1.0	1.6	0.0	8.1
2012	5.6	1.1	1.7	0.1	8.5
2013	6.8	1.3	1.7	0.1	10.0

Sources: Washington State Department of Revenue, 2014; Washington State Wine Commission, 2015; Community Attributes Inc., 2015.

## 8.2 Total Fiscal Impact of Wine Production in Washington State, 2013

Total fiscal impacts factor in the total economic impacts of wine production and related activities in the state, including revenues generated through additional economic activities supported through indirect and induced impacts of these activities (either through supply chain linkages or income expenditures). In 2013, the wine industry supported, directly and through multiplier effects, \$61.9 million in state taxes, including \$1.7 million in assessments paid by grape growers to finance industry promotion and support activities equal to \$12 per ton (\$2 per ton funding V&E Research and \$10 per ton funding marketing efforts) (**Exhibit 8.2**).

### Exhibit 8.2 Total Fiscal Impacts of Wine Production by Tax Revenue Source, 2013, Millions of Dollars

Tax Type	State Tax Revenues (Millions)
Sales & Use	\$36.0
B&O	\$17.9
Other	\$4.6
Wine Assessments*	\$2.7
Grape Assessments	\$1.7
<b>Total Fiscal Impact</b>	<b>\$61.9</b>

Sources: Washington State Office of Financial Management, 2014; Washington State Department of Revenue, 2014; Washington State Wine Commission, 2015; Community Attributes Inc., 2015.

\*Includes wine assessments and liter-based taxes.



# 9

## Summary of Findings



# NINE SUMMARY OF FINDINGS

The wine industry is large and growing, representing a significant economic growth opportunity for Washington: wine grape production increased at a CAGR of 7.6% from 1990 to 2013, and wine revenue totaled just under \$1.5 billion in 2013. Wine production in the state increased from 1.5 million cases in 1990 to 14.8 million cases in 2013. Washington's wine industry is a diverse and unique mix of large and small wineries and vineyards supported by a large network of suppliers, educational institutions, and support services.

Together, wineries, vineyards, suppliers, and support organizations had total revenue impacts of \$4.8 billion, \$1.8 billion of which was direct winery revenue. Total jobs supported reached 26,900 in 2013. The industry supported \$61.9 million in state taxes in 2013, including both direct payments and those among businesses supported by wine and related activities.

The impact of wine and grape production has grown over time. Based on the methodology employed in this analysis, business revenues directly supported by wine and related activities grew from \$1.8 billion in 2009 to \$2.4 billion in 2013 (**Exhibit 9.1**).

## Exhibit 9.1 Direct Business Revenues in Wine and Related Activities, 2009 and 2013 (in Millions of 2013 Dollars)

Segment	2009	2013
Wine Production	1,074.3	1,489.2
Wholesale Mark-up	153.5	212.8
Retail Mark-up	160.9	223.1
Restaurant Mark-up	200.9	278.5
Tourism	139.3	193.1
<b>Total</b>	<b>1,728.8</b>	<b>2,396.6</b>

Source: Community Attributes Inc., 2015.

Similarly, the total economic impact of these activities—measured in business revenues—increased from \$3.5 billion in 2009 to \$4.8 billion in 2013, representing a CAGR of 8.5% per year (**Exhibit 9.2**).

## Exhibit 9.2 Comparison of Total Economic Impacts, 2009 and 2013

Measure	2009	2013
Jobs	18,700	25,900
Labor Income (mils 2013 \$)	828	1,144
Revenues (mils 2013 \$)	3,453	4,783

Source: Community Attributes Inc., 2015.

Washington's wine industry is an important tourist attraction. In 2014, an estimated 808,000 tourists visited the state's wineries in 2.1 million individual visits. Tourists spent an estimated \$193.1 million and supported an estimated 1,800 jobs.

In the past few years, Washington State wines have gained increased attention and awards from experts across the nation. In 2014, *Wine Enthusiast*, *Wine Spectator*, and *Wine & Spirits* included 32 wineries and 35 distinct wines from Washington State in their "Top of 2014" lists. With more than 18,000 submissions reviewed between the three magazines and just 100 top slots each, these magazines included more Washington State wines than the state's share of national production alone would suggest.

At the same time, the wines produced in Washington have a high quality-to-price-ratio, according to interviewees. Largely thanks to relatively low land prices, vineyard owners are able to produce quality grapes at a lower price point than the state's chief competitors.

Washington's wineries and vineyards are primarily small operations. More than 64% of Washington State wineries sold fewer than 1,000 cases in 2013 and 5.4% sold more than 100,000 cases. The largest wine producer in the state, Ste. Michelle Wine Estates, produced approximately half of the state's wine across multiple locations. Other wineries, like L'Ecole No. 41 and Terra Blanca, produce limited quantities of boutique wine.

The state's wine industry faces the opportunity to meet increasing demand for wine, which is at an all-time high in the U.S. on both a case per capita and gross basis. Washington's industry can grow through individual winery growth or new entries into the industry. Scaling involves many factors, such as access to grapes, distribution channels, equipment costs, and land, among many other considerations. Individual winery owners poised to scale up production need to decide whether they want to do so, as this can initiate a lifestyle path some winemakers do not want to take. As wineries increase in production, all operating costs scale with the exception of cooperage, as it is tied directly to production volume.



# Appendix



## Appendix A: Terminology

### Direct, Indirect, and Induced Effects

For determining economic impact, three distinct types of effects are quantified and added together. The first area, **direct effects**, refer to the immediate activities that are being studied and which involve the sale of a product to either an end-user or as a domestic or foreign export. In the case of wine production, the value of grapes is carried over into the production of wine, and is therefore not considered a direct activity (along with any supplier sales to wineries). The two exceptions are for wine sales to wholesalers and retailers; in input-output modeling, the only revenues reported for retailers and wholesalers are for the gross margins generated from the sale, and thus do not include the underlying value of the wine being sold.

**Indirect effects** are the effects of inter-industry transactions. The sale of bottles to a winemaker, for example, is an inter-industry transaction from a bottle wholesaler to winery. Even wine grape sales to a winemaker are inter-industry transactions. **Induced effects** refer to the effects of wages spent by employees supported by direct and indirect revenues, such as business revenues among retailers and restaurants supported through winery employees spending a share of their income at these establishments, and resulting jobs supported by these sales. Indirect and induced effects together are often referred to as **secondary effects**.

### Multiplier Effect

The multiplier effect describes how an increase in one economic activity is correlated with a broader increase reflecting the combined direct and secondary impacts across the economy. Multiplier effects is thus the total economic impact of an activity divided by the direct activity being modeled, or measured either as revenues, jobs, or wages.

## Appendix B: Methodology

### Winery Revenue Estimates

Wine revenue estimates were based on several sources. Because several major participants in wine production, most notably Ste. Michelle Wine Estates, have recently been classified by the Washington State Department of Revenue (DOR) as wholesalers and not wineries, gross business income (i.e., gross receipts, GBI) data for wineries does not adequately capture these activities.

To resolve this issue, Community Attributes used a combination of gross sales by volume within Washington and imputed gross revenues from out-of-state sales derived from the Washington State Department of Revenue's tax disclosure, calculating an average price per reports. Total revenues were estimated by first using the Washington State Wine Commission's statewide revenue estimate of \$1.01 billion for year 2009 as a base. The share of revenues not accounted for by either 2009 GBI or Ste. Michelle Wine Estates thus represented other winery revenue from operations similarly classified as something other than a winery in DOR data, such as Hogue Cellars (wholesaler) or by operations that produce wine but are primarily engaged in grape production.

After estimating the amount of 2009 revenues representing these other operations, subsequent year sales among this group were based on total (volume) in-state sales year-over-year growth each year between 2009 and 2013, and added to annual winery GBI and Ste. Michelle Wine Estates reported revenues for these years.

### **Mark-up Estimates**

Mark-up revenues represent an important segment of impacts for wine production. While the sale of wine from a winery to wholesaler, and wholesaler to a restaurant or retailer, and the final sale to a consumer, includes the underlying value of the wine, the margins earned at each level of transaction represent direct revenues generated through the sale above the value of the wine itself.

Community Attributes first compared Washington State Liquor Control Board data on gross in-state Washington winery sales and sales to distributors, and determined 97% of all sales from wineries by value were to distributors. Next, an estimated 30% mark-up—based on research by Washington State University and interviews with industry participants—was applied to this amount to calculate wholesaler mark-up revenues within Washington.

The 2007 U.S. Benchmark Input-Output Table was consulted to estimate the split between wholesaler sales to retail outlets (80%) and restaurants (20%). Based on interviews, an estimated 30% was applied to retail sales, while a 150% mark-up was applied to restaurant sales.

## **Vineyard Employment and Wages**

The ratio of acreage planted of wine and non-wine grapes for 2007-2013 was used to estimate wine grape vineyards' share of total vineyard employment. The same ratio was used to determine wine grape vineyards' share of total vineyard wages.

## **Winery Self Employed and Partnerships**

Self-employment data represent a combination of reported licensed wineries and self-employment data published by the U.S. Census Bureau. After estimating the number of non-employer firms, a multiplier of 1.2 was used to scale non-employer entities to total self-employment, accounting for both sole proprietorships and partnerships.

## **Acreage Estimates**

Acreage estimates made by USDA NASS are primarily based on survey information. In order to publish any estimates, NASS is required to obtain a survey response rate of 80% or more. Remaining data is filled in based on information from previous years, acreage reports for other crops in the state, and infrared satellite imagery. The CAI estimate is based on known historic yields for 21 major grape varieties and known production values from 2002 through 2013.

## **Survey**

In order to better understand the activities and key metrics of wineries, a survey was deployed to more than 800 wineries, of which more than 50 responded to survey questions. Major topics included: growth opportunities, winery visits and tourists, and business models for wine production.

## **Tourism Activities**

Tourism activities were estimated through the use of data and assumptions developed through interviews. The analysis followed in two steps: 1) estimating wine tourism impacts for Walla Walla; and 2) estimating total unique visitors by county, and applying some elements of Walla Walla visitors to these other regions.

In the first part of this analysis, the following sources were used:

- Walla Walla Visitors Bureau estimated share of visits for wine tasting activities in the region (81%).
- Walla Walla taxable retail sales for accommodations (NAICS 7211) and total booked rooms (178,211; Smith Travel Group) for year 2013 to calculate average price per room.
- British Columbia Wine Institute estimate of dollars spent on wine purchases per visit.
- U.S. Travel Association estimate for share of total expenses of a wine tourist on wine purchases of 21%

Estimating the total budget among wine tourists was based on dividing \$100 in wine sales by 21%, yielding a total budget for non-wine purchases, such as lodging, food, and miscellaneous items of \$478 per visitor, or \$239 per visitor per day.

Estimates for Walla Walla were first developed as a benchmark for other regions. In 2013, based on the above data sources, the average price per room in Walla Walla was \$114. Community Attributes assumed the following: 1) average room occupancy of two people; and 2) average of two nights per visit to Walla Walla. Based on the above, and rounding up to account for B&B stays not accounted for in taxable retail sales for accommodations, there were an estimated 145,800 unique visitors to Walla Walla for wine tourism in 2013 (178,211 \* 2 rounded up to 360,000 \* 81% as the share of all visitors coming for wine tourism and divided by 2 nights). Based on the average price per room, number of nights, and number of unique visitors, yielded accommodation expenditures of \$16.5 million in 2013, or about \$228 per visitor for lodging.

To estimate tourism impacts among other regions, CAI began with Ste. Michelle Wine Estates visitor data by winery. Based on interviews, assumptions were developed about the share of total visitors who include a Ste. Michelle Wine Estates winery as part of their itinerary. For example, Community Attributes estimated that 60% of all wine tourists to Woodinville include Chateau Ste. Michelle in their plans; this yielded total unique visitor estimates for regions with a Ste. Michelle Wine Estates winery. Distribution of wine output by county was used to then estimate the remaining wine tourists across other counties without a Ste. Michelle Wine Estates winery.

Once unique visitors were estimated by region, further assumptions were developed, again based on interview feedback, on the average number of days per visitor for each region. For example, the average visitor in King County was estimated to visit for one day, given the majority of tourists traveling from Seattle to Woodinville, whereas the average visitor to Walla Walla spends two days (and nights) in the region. These assumptions were then used, with estimated average daily budget and number of unique visitors, to calculate the total travel budget expenditures by wine tourists. Data on the distribution of tourist expenditures reported by Dean Runyan Associates<sup>1</sup> for Washington State was used to allocate total expenditures by type for impact modeling purposes.

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<sup>1</sup> Dean Runyan Associates, “Washington State Travel Impacts & Visitor Volume, 1991-2013P,” Prepared for the Washington Tourism Alliance, March 2014.

## **County Metrics**

### **Vineyards**

Vineyard-level metrics were derived from NAICS 111332 (grape vineyards) and wine and non-wine grape production. In order to estimate total employment, the ratio of self-employed to total employed for the state (discussed in the previous pages) was applied to wine grape vineyard employment at the county level. Wage income for the self-employed was estimated by applying the county-level wage per employee to total estimated self-employed. Revenues were scaled by employment. King County vineyards were suppressed, so the average employees per firm and wages per employee for the next highest level (111) were applied to vineyard firms.

### **Wineries**

Winery-level metrics were derived from NAICS 312130 (wineries). In order to estimate total employment, the ratio of self-employed to total employed for the state (discussed previously) was applied to winery employment at the county level. Wage income for the self-employed was estimated by applying the county-level wage per employee to total estimated self-employed. Revenues were scaled by employment. Walla Walla employment was suppressed, so the average employees per firm and wages per employee for the next-highest level (3121) were applied to winery firms.

## **Appendix C. Economic Impact Analysis**

The primary tools for estimating the broader impacts of the wine cluster in Washington State were the Washington State Input-Output (I-O) Model for year 2007, published in 2012, and IMPLAN. The Washington State I-O Model provides a data-rich rendering of the state economy across 52 sectors. The transactions table, which underpins the I-O model, provides estimates of intermediate purchases, sales, and final demand across all modeled sectors. The complex analysis of the model, published online by the Washington State Office of Financial Management, allows analysts to model the impacts of economic activities when output, labor, wages, and first round direct purchases/requirements are known.

In order to apply the input-output model for multiple years of analysis, implicit price deflators were used to adjust previous year totals to 2013 (the most recent modeling year). Direct requirements for wine production were calculated based on shares of purchases for each sector to each year of output, derived from the 2007 transactions table, as well as IMPLAN social accounting matrices, and interviews.

The economic impacts of wine production in Washington include direct, indirect, and induced effects, the total impact being the sum of these impacts. Analysis begins with a transactions table, constructed from multiple data sources by Beyers and Lin.<sup>2</sup> This table captures all transactions between and within industries and final demand, the latter including personal consumption expenditures (i.e., household consumption), domestic and foreign exports, investment, and federal, state, and local expenditures. Total output in an economy is thus the sum of inter- and intra-industry purchases, also referred to as intermediate transactions, and final demand. The input-output transactions table is governed by an important accounting identity requiring all purchases in an economy to equal all output. Within the transactions matrix, the sum of each column represents all purchases by an industry or source of demand, and will equal the amount sales and output by that activity.

For example, in the latest transactions table, the input-output sector “Software Publishing and Internet Service Providers” in 2007 purchased nearly \$5.3 billion in non-labor inputs from other industries in Washington. Added to this, the sector paid \$9.7 billion in wage and salary outlays (including non-wage benefits), plus \$8.3 billion in other value-added activities (e.g., profits, dividend payments) and \$10.1 billion in imported (domestic and foreign) inputs; these amounts total \$33.4 billion, exactly equal to total sales, or output, by this industry in Washington.

The columns of a transactions table thus represent production functions for each modeled industry. Direct requirements coefficients, also referred to as technical coefficients, are the share of total purchases for each input. For example, in 2007, again return to the Software Publishing and Internet Service Providers industries in Washington, firms belonging to this grouping purchased \$240.4 million in goods and services from the industry category “Architectural and Engineering /Computer Systems Design and Related Services,” translating into a direct requirements coefficient of 0.0072, or 0.72% of all purchases made by Software Publishing and Internet Service Providers based in Washington State (\$240.4 million / \$33.4 billion).

Once a matrix of direct requirements is calculated, a series of equations is used to relate changes in demand in one sector of the economy to changes in gross output to across the entire economy. Inter-industry transactions, denoted “O,” is equal to a vector X of gross output per industry multiplied by the matrix of direct requirements, denoted “A.”

$$O = AX$$

The vector of gross output per industry, X, is the sum of inter-industry output (transactions) and final demand.

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2 Beyers, W. & Lin, T.-w. (2012). The 2007 Washington State Input-Output Model. Olympia, WA: Washington State Office of Financial Management. Retrieved from [http://www.ofm.wa.gov/economy/io/2007/I-O\\_2007\\_report.pdf](http://www.ofm.wa.gov/economy/io/2007/I-O_2007_report.pdf).

$$X = O + D$$

Combining equations (1) and (2) results in industry gross output equaling the sum of industry output multiplied by direct requirements plus final demand:

$$X = AX + D$$

Rearranging this equation:

$$D = (1-A)X, \text{ and}$$

$$X = D(1-A)^{-1}, \text{ the } (1-A)^{-1} \text{ inverse matrix referred to as the "Leontief Inverse."}$$

Finally, input-output modeling is primarily used to assess economy-wide changes given a change in one or more activities, resulting in equation (6):

$$\Delta X = (1-A)^{-1}\Delta D$$

### **Adjusting for Double Counting**

In order to calculate the combined impact of all direct activities analyzed in this study, more accurate estimates of final demand must be completed. Final demand refers to the final sale of goods and services to end-users or to additional value-added processing outside Washington State (either domestically or overseas), and thus excludes inter- and intra-industry sales. For example, essentially all wine grapes produced in Washington are either by estate wineries, for their own production, or sold to other wineries as an intermediate input. Adding both farming-based economic impacts and processor-based impacts would result in double-counting of some jobs and revenues. The same applies to purchases of other suppliers, such as equipment from wholesalers. Revenues, jobs, and wages tied to these activities/transactions are accounted for as indirect impacts.

### **Customizing Model to County Level**

To adjust the I-O model to conduct county-based estimates, Community Attributes employed location quotients for each industry covered in the state I-O model for each county of interest. Location quotients, which measure the relative concentration of any given activity in a select geography relative to a benchmark, in this case Washington State, help control for the unique specificities of the region being analyzed.

## Appendix D. Interviewees

Community Attributes staff and leadership conducted 15 interviews with key stakeholders between September 2014 and January 2015. In order to gain a better understanding of the breadth and depth of Washington State’s wine industry, Community Attributes selected interviewees from across a range of wineries, vineyards, and support organizations. **Exhibit A.1** lists interviewees and their respective organizations.

### Exhibit A.1 Interviewees and Organizations

Contact	Organization
Eric and Norm McKibben	Amalvi/Pepperbridge
Corey Braunel	Dusted Valley
Charlie Hoppes	Fidelitas Red Mountain
JJ Williams	Kiona Vineyards
Marty Clubb	L'Ecole No 41
Chris Figgins	Leonetti and Figgins
Heather Unwin	Red Mountain AVA Alliance
Trey Busch	Sleight of Hand
Multiple	Ste. Michelle Estates
Keith Pilgrim	Terra Blanca
Chris Mertz	USDA NASS
Vicki Scharlau	WA Grape Growers Assoc.
Nick Villuzi	Walla Walla Community College
Duane Wollmuth	Walla Walla Valley Wine Association
Thomas Henick-Kling	WSU Viticulture and Enology

## Appendix E. Wine and Juice Grapes

Washington is a major producer of both wine grapes and juice grapes, though the latter has seen a slide in production since 2007, declining 6.5% per year compared with growth of 8.7% for wine grapes (**Exhibit 3.2**).

While both juice grapes—primarily Concord grapes—and wine grapes belong to the same family, interviewees emphasized the two are widely quite different in terms of the type of land ideal for growth, cultivation methods used, and fruit properties. For these reasons, it is rare for a juice grape vineyard to be replanted with wine grapes. According to one industry expert, juice grape vineyards are more likely to be replanted “with apples or cherries, which are more similar to juice grapes [in terms of cultivation] than to wine grapes.”