

Appendix G

Red Mountain AVA Master Site Plan (2012)

RED MOUNTAIN AVA MASTER SITE PLAN

BENTON COUNTY, WASHINGTON

DECEMBER 2007/ *UPDATED SEPTEMBER 2012

*PER NEXT STEPS STATUS & MAP UPDATES PREPARED BY J.T. ATKINS COMPANY AND
GMA CONSISTENCY REVIEW BY BENTON COUNTY PLANNING STAFF

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www.cted.wa.gov

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www.winecountrywashington.org

RED MOUNTAIN AVA MASTER PLAN – SEPTEMBER 2012 UPDATE

In June 2012, a review and update was initiated of the draft 2007 Red Mountain AVA Master Site Plan via a contract with J.T. Atkins Company, the Plans initial consultant. At its conclusion in September 2012, the update produced: revisions to the Red Mountain AVA ownership and Red Mountain Master Site Plan maps; an update of Chapter Seven, “Next Steps” providing direction for specific areas needing update, and strategies to assure the Plan’s future adoption and implementation. This Update also included the County Planning staff’s consistency review and recommendations to assure the Plans’ consistency with the County’s Comprehensive Plan, zoning code, and the Washington State Growth Management Act (RCW 36.70A). The review and update process was assisted by members of the Red Mountain AVA Alliance, public agencies and interested parties, and directed some minor modification to the Draft 2007 Red Mountain Master Site Plan. The modifications made are discussed and directed by Chapter Seven herein.

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Executive Summary

The Red Mountain American Viticultural Area (AVA) is an approximately 4,600-acre, federally designated grape-growing and wine-producing region on the south-facing slope of Red Mountain. Located within unincorporated Benton County, the Red Mountain AVA is bounded by the Yakima River terrace to the west, the ridgeline of Red Mountain on the northeast and the lowlands bordered by Interstate 82 on the southeast.

The AVA is a place of beauty, where wineries lie within a sea of vineyards against the back drop of Red Mountain. The setting creates a landscape of significant scenic quality appreciated by residents and visitors alike. The area's rural beauty is reinforced by the natural character of the place; where topography, soils and solar aspect have combined to make Red Mountain a special place to grow grapes and make wine. These qualities have drawn national and international attention. Red Mountain wines consistently are rated at the highest quality: between 1998 and 2004 Red Mountain vineyards and wineries received 23 national and international awards including the distinction of receiving top-quality ratings on several occasions. Thus, Red Mountain's working landscape is an important economic resource for the region.

The beauty of Red Mountain and the quality of the wines produced have generated the desire to develop additional wineries and vineyards on Red Mountain. But if development pressures are not managed well, the qualities of Red Mountain that draw people to the place could be lost. These forces created a call to action to explore ways to accommodate new development that reinforce and enhance the existing qualities of the Red Mountain AVA.

The success of Red Mountain is attracting national and worldwide attention, and the AVA is a focal point for future vineyard and winery development.

MASTER SITE PLAN NEED AND BENEFITS

In 2005 Benton County, together with an alliance of vineyard and winery operators, local agencies and stakeholders, commissioned the Red Mountain AVA Master Site Plan planning process. The purpose of the planning process was to develop a vision for the Red Mountain AVA that enhances the region's economic opportunities for both the wine and visitor industries, manages the anticipated growth on Red Mountain, and increases the visibility of the Red Mountain AVA. The Master Site Plan presents a vision of a future development pattern for Red Mountain that expands and enriches visitor and resident opportunities while preserving the special qualities of the AVA.

The Master Site Plan has been developed in two phases. During Phase 1 existing AVA conditions were analyzed and the initial AVA visions for the future presented and evaluated. Meetings with the AVA Advisory Team composed of representatives from the project funding entities and other community and business representatives, as well as a public open house, were held to obtain information and comments. During Phase 2 the vision has been refined, site-specific concepts delineated, additional illustrative conceptual plans and character images drawn,

and supporting information developed. Phase 2 has also included public open houses and meetings with the AVA Advisory Team and other property owners.

The Master Site Plan presents a framework and process for managing future development within the AVA so that new development will advance the Red Mountain vision while protecting the qualities that make Red Mountain a special place. Developed from the Phase 1 Conceptual Plan this Master Site Plan (Phase 2) is a draft proposal intended to realize the future vision for Red Mountain. The contents of the draft proposal include land use maps, descriptive text, critical data and resource information, design guidelines and implementing ordinances.

The draft proposal is a coherent body of recommendations and alternative strategies (e.g., ways to provide for fire-flow capacity and process waste-water disposal) that will be considered as a whole or in part for adoption and sub-area amendment to the Benton County Comprehensive Plan by the Board of Benton County Commissioners. Adoption will occur only after the draft proposal goes through a public process (during 2008) that includes an additional review and comment period with County planning staff, and then public hearings by the County Planning Commission and Board of County Commissioners. Once amended to the County Comprehensive Plan, provisions of the Red Mountain Master Site Plan will supplement some of Benton County's current policy and land use controls for the area that is within the Master Site Plan boundary. The Phase 2 product provides the following:

Specifically, the Phase 2 information and documents provide the following:

- A framework for future development within the AVA that protects the qualities that make Red Mountain AVA a special place.
- Information that the Benton City, West Richland and Tri-Cities communities can use in their economic development plans.
- Assistance to Red Mountain vineyard and winery owners in their future development efforts.
- A vision that attracts additional quality wineries to the area.
- A rich range of visitor opportunities that will enrich their visit to the Red Mountain AVA.
- Information to be used to further define the Red Mountain area and supplement Benton County's Comprehensive Plan and preparation of zoning ordinances regarding the Red Mountain AVA, thus enabling implementation of the Master Site Plan.
- A foundation for a design review process of proposed commercial projects on Red Mountain.

AVA VISION

Implementing the Master Site Plan vision will preserve and enhance this unique area. The vision for the AVA builds on the globally competitive wines that the AVA now produces, presents a range of benefits to the vineyard and winery operators, and expands and enriches wine visitors' experiences by providing opportunities for recreation, interpretation and education. The Master Site Plan respects the quality of life for those who reside on Red Mountain as well as providing a framework for adjacent communities to participate in the wine-visitor-related economic benefits.

Master Site Plan elements include expansion of existing vineyard and winery operations, a number of new vineyards and wineries, new visitor-oriented facilities including a Wine Village and recreation and interpretive experiences, as well as additional development on adjacent areas.

Visitor projections show that, by the year 2025, the Red Mountain AVA will attract approximately 233,000 wine-oriented visitors (815,500 winery visits) – a nearly nine-fold increase over the current level.

The Red Mountain AVA will function as a primary destination and a premium wine-producing attraction of Washington Wine Country as characterized by the following conditions:

- The characteristics of Red Mountain land will attract grape growers and vintners focusing on particularly high-quality wine production (representing the upper end of the quality continuum for all wines in the region).
- The Red Mountain AVA will remain substantially in agricultural use, with most of the site dedicated to a viticultural reserve that maximizes the amount of land available for grapes, preserving over time a unique and desirable setting for visitors.
- Approximately 20-30 additional wineries will be located there; a portion will concentrate on vineyards only and a portion will operate tasting rooms, most of which will be open to the public.
- At least some individual wineries will develop specialized, small- to moderate-scale wine- oriented events and food service capability; small-scale lodging may also be expanded.
- A market will develop for fine dining, lodging, and events serving the AVA.
- Growing traffic to Red Mountain will foster commercial development on adjacent lands, in particular on land adjacent to I-82 and to Benton City, West Richland and the Tri-Cities.
- Opportunities for interpretive, educational and outdoor recreation experiences will further enrich the area.

The vision for the Red Mountain AVA is that the area become a “viticultural park” that provides visitors with a wide range of recreation and interpretive experiences that complement the vineyard and winery related experiences. The viticultural park builds on the intrinsic qualities of

Red Mountain as well as the excellence of the grapes grown and wine created within the AVA and gives visitors and residents a richer range of experiences and facilities than those found at other wine tourism destinations. The Wine Village will be a focal point for visitors' experiences. Within the Village visitors can visit the interpretive center, restaurants, shops and galleries. A network of hiking, equestrian and biking trails radiate from the Wine Village, immersing the visitor in the vineyards and linking wineries, viewpoints and interpretive areas. The village could also include offices, a hardware store, and small working shops that supply the wineries and vineyards with products and services like corks, capsules, labels, barrels, and cellar equipment.

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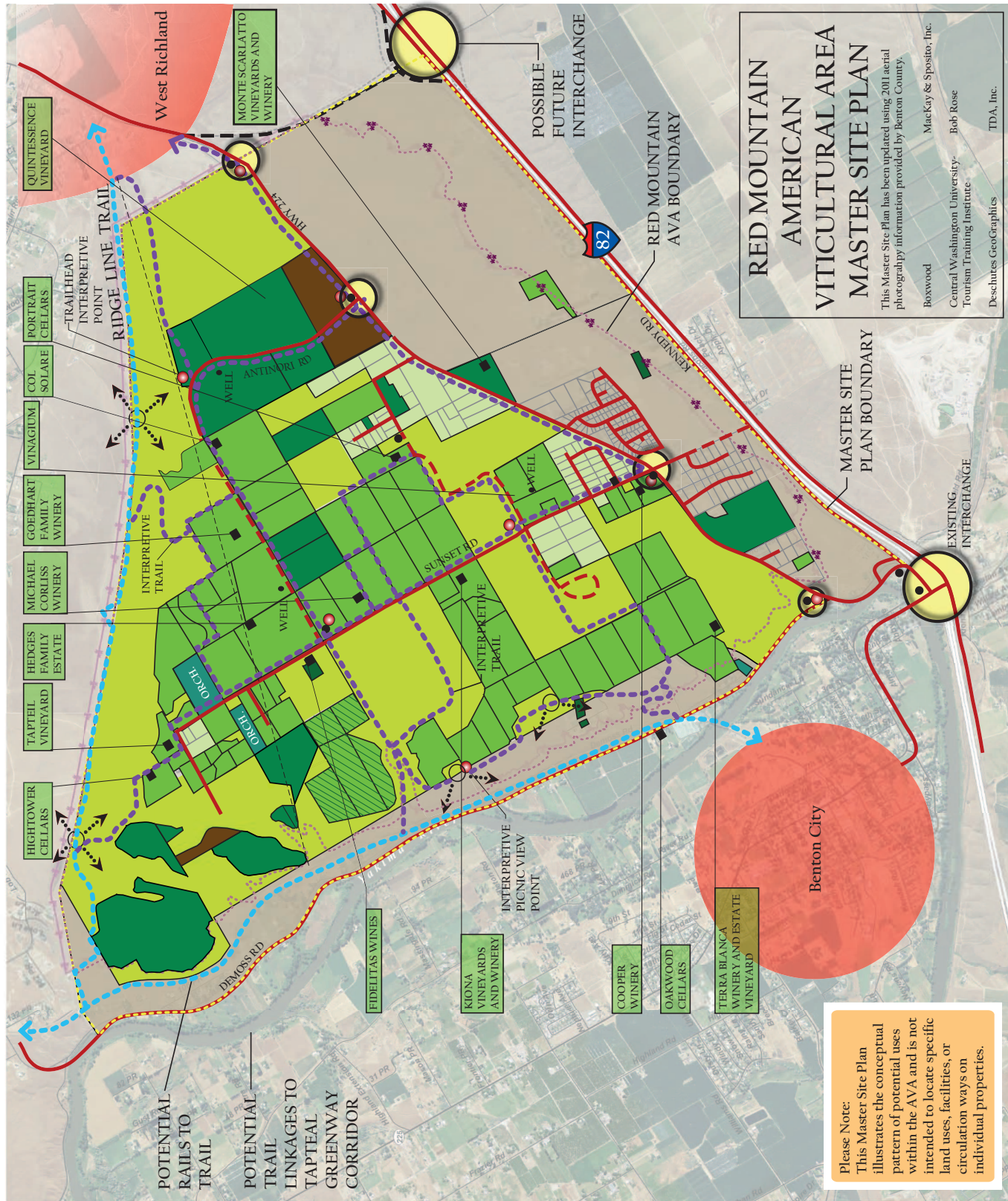
1. INTRODUCTION

The Red Mountain Site Master Plan presents a vision for the future of the approximately 5,400 acres (8.3 square miles) Red Mountain Area, as depicted on Figure 1-1, including the approximate 4,600-acre (6.9 square mile) of the Red Mountain American Viticultural Area (AVA). It is the result of an interactive process among the Advisory Team, composed of representatives from the funding entities that worked with staff and the consultant team on the project, stakeholders, the public, and the consultant team that began in June 2005 and concluded in December 2007. The Master Site Plan, shown on Figure 1-1, provides the following:

- A framework that focuses on the opportunities for future growth in the AVA and the creation of a viticultural park, while respecting and protecting private property and the intrinsic natural qualities that make the Red Mountain a special place.
- A mix of vineyards, wineries and visitor facilities and traditional “soft” wine industry suppliers that responds to site conditions and respects the patterns of existing and future vineyard and winery development.
- The Master Site Plan planning process will result in the adoption of the Master Site Plan and Master Site Plan inclusion into the Benton County Comprehensive Plan as a sub-area plan, development of new zoning categories and Red Mountain AVA commercial development design guidelines. All are important steps in implementing the vision presented in this plan.

WHAT IS AN AMERICAN VITICULTURAL AREA?

- An AVA is a delimited grape-growing region distinguishable by geographic features, with boundaries defined by the United States government’s Alcohol and Tobacco Tax and Trade Bureau (TTB). The TTB defines these areas at the request of wineries and other petitioners. As of April 2007 there were 187 AVA’s in the United States.¹
- They range in size from the Ohio River Valley AVA at 16,640,000 acres (26,000 square miles) covering parts of four states, to the Cole Ranch AVA in Mendocino County, California, at only 62 acres (.1 square mile). The Augusta AVA in Augusta, Missouri was the first recognized AVA, obtaining the designation on June 20, 1980.²
- An AVA specifies only a geographic location; it does not limit the type of grapes grown, the method of vinification, or the yield. The Red Mountain AVA was established in 2001. The technical European equivalents of the American Viticultural Areas include historic names like Burgundy, Champagne, or Tuscany.



LEGEND



NOTE: RED MOUNTAIN WINE VILLAGE (MPR) SITE SELECTION DEPENDING ON SITE AVAILABILITY AND SUITABILITY AS DESCRIBED IN THE MASTER SITE PLAN DOCUMENT.

- 13 EXISTING WINERIES
- POTENTIAL VINEYARDS AND WINERIES
- EXISTING VINEYARD
- EXISTING VINEYARD ADDED SINCE 2009 UPDATE
- INACTIVE VINEYARD
- LAND CLEARED FOR VINEYARD DEVELOPMENT
- EXISTING RESIDENTIAL POTENTIAL VINEYARDS AND WINERIES
- RURAL LANDS FIVE ACRE (RL-5)
- VISITOR FACILITY AND WINE PRODUCTION SUPPORT OPPORTUNITIES IN NEIGHBORING COMMUNITIES
- ORCHARD
- EXISTING ROAD
- AVA BOUNDARY
- MASTER SITE PLAN BOUNDARY

The location of the following plan elements is conceptual.

- GATEWAYS IN PUBLIC RIGHT OF WAY
- WAYFINDING SIGNS
- INTERPRETIVE/ DISCOVERY POINTS
- VIEW POINTS
- POSSIBLE FUTURE I-82 INTERCHANGE ROAD
- PROPOSED 2 LANE RURAL ROAD
- POTENTIAL TRAILS
- POTENTIAL REGIONAL TRAILS

Please Note:
This Master Site Plan illustrates the conceptual pattern of potential uses within the AVA and is not intended to locate specific land uses, facilities, or circulation ways on individual properties.

Boxwood
Central Washington University-
Tourism Training Institute
MacKay & Spisito, Inc.
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TDA, Inc.

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FIGURE 1-1

PLANNING APPROACH

The size and shape of the Red Mountain AVA is ideal for this kind of master site planning; it lends itself to defining a vision for the total area while at the same time addressing the needs of the Red Mountain residents and visitors. The Red Mountain AVA Master Site Plan is the second of a two-phase planning process. The Master Site Plan presents a vision for the AVA's future. It is based on early efforts of several AVA vineyard and winery owners, the Phase 1 conceptual planning, and the Phase 2 master site planning process.³

As with the Conceptual Plan, this plan has been developed through an iterative planning process that inventoried, mapped and analyzed existing natural, cultural and economic resource information for the site and region to identify the opportunities and challenges that will shape the future of the Red Mountain AVA. The consultant team worked closely with the Advisory Team, AVA vineyard and winery owners and operators, other community leaders and stakeholders and the public (see Appendix A for the summaries of comments from the public meetings and responses to those comments) to capture and articulate a common vision for the future of the AVA.

The Master Site Plan planning approach:

- Builds on the foundation of earlier work carried out by the project sponsors and the Phase-1 Conceptual Plan
- Defines how a successful viticultural visitor destination could be created without losing its rural character
- Generates local support and a sense of ownership for an inspiring vision
- Builds support for managing the future of the Red Mountain AVA
- Presents a vision for the Red Mountain AVA and identifies the steps to be taken to implement the vision
- Presents guidelines for the development of future commercial projects within the Red Mountain AVA

MASTER SITE PLAN – GUIDING PRINCIPLES

The following guiding principles were developed through the planning process to assist in decision making regarding Red Mountain AVA's future development:

Make Red Mountain the place all wine lovers want to visit.

- Make and sell highest quality wines
- Attract grape growers and vintners who focus on high-quality wines
- Increase Red Mountain AVA visibility
- Provide elements that support wine production and sale

Protect Red Mountain AVA character.

- Preserve the quality soils to grow grapes
- Respect the area's rural scale and character
- Encourage sustainable development and operation
- Incorporate a high standard of design and materials
- Respect private property rights

Provide high-quality visitor amenities and experiences.

- Provide lodging and dining opportunities **of appropriate quality and scale.**
- Develop compatible recreation amenities
- Expand visitor interpretation and education opportunities

Support local economies.

- Focus a majority of the AVA-generated visitor facility opportunities in Benton City and West Richland and the Tri-Cities

Create Red Mountain as a model of sustainable design, construction and operation.

- Encourage future development to incorporate sustainable design principles in the design, construction and operation of the facilities
- Preserve and restore native shrub-steppe vegetation where such preservation and restoration complements vineyard and winery operations

The Master Site Plan presents a framework and process for managing future development within the AVA so that new development will advance the Red Mountain vision while protecting the qualities that make Red Mountain a special place. Developed from the Phase 1 Conceptual Plan, this Master Site Plan (Phase 2) is a draft proposal intended to realize the future vision for Red Mountain. The contents of the draft proposal include land use maps, descriptive text, critical data and resource information, design guidelines, and implementing ordinances.

The draft proposal is a coherent body of recommendations and alternative strategies (e.g., ways to provide for fire-flow capacity and process waste-water disposal) that will be considered as a whole or in part for adoption and amendment to the Benton County Comprehensive Plan by the Board of Benton County Commissioners. Adoption will occur only after the draft proposal goes through a public process that includes an additional review and comment period with County planning staff, and then public hearings by the County Planning Commission and Board of County Commissioners. Once amended to the County Comprehensive Plan, provisions of the Red Mountain Master Site Plan will supplement some of Benton County's current policy and land use controls for the area that is within the Master Site Plan boundary.

THE RED MOUNTAIN AVA VISION

The vision for the Red Mountain AVA is that the area will become a “viticultural park” providing visitors a wide range of recreation and interpretive experiences that complement the vineyard and winery related experiences. The viticultural park builds on the intrinsic qualities of Red Mountain – the excellence of the grapes grown and the wine created within the AVA – and provides visitors and residents a richer range of experiences and facilities than those found at other wine tourism destinations. The Wine Village will be a focal point for visitors’ experiences. Within the Village visitors can visit the interpretive center, restaurants, shops and galleries. A network of hiking, equestrian and biking trails radiate from the Wine Village, immersing the visitor in the vineyards and linking wineries, viewpoints and interpretive areas. Visitors can plan to spend the day, or multiple days at Red Mountain and tour many wineries or visit the wineries on their favorites list. Throughout their visit, visitors will be immersed in the wine experience and the beauty of the Red Mountain AVA.

The Red Mountain AVA vision is inspired by the beauty of the place and the globally competitive wines created at Red Mountain. The existing vineyards and wineries grow grapes and make wines that attract national and international attention to this special place. Between 1998 and 2004 Red Mountain vineyards and wineries have received national and international awards including the distinction of being on the world’s top wine list on several occasions. Red Mountain wines continue to be consistently rated at the highest quality.

Visitors first view the Red Mountain AVA as they approach the area along Interstate-82, De Moss Road, or State Route (SR) 224. At present, they see a landscape composed of scattered vineyards enclosed by native shrub steppe vegetation, with the backdrop of Red Mountain. The landscape is in transition, and is experiencing the pressures of success. If not managed wisely, development pressures could reshape this landscape in ways that would destroy the special qualities of the place. This same landscape provides rich opportunities to accommodate new development that will reinforce and enhance the existing qualities of the Red Mountain AVA.

Future AVA visitors will be greeted by a sea of vineyards, with rural two-lane roads and well-designed wineries creating a beautiful landscape mosaic framed by the distinctive Red Mountain ridge. Visitors will be welcomed to the AVA at “gateways” located at the AVA entry points on public roads. These entry points will be enhanced with vegetation, welcome signs and way-finding signage directing visitors to their desired destinations. All gateway elements will be located within public rights of way. As they enter the AVA, they will sense that they are in a special place. The AVA will provide the vineyard and winery experience they are expecting and more – at Red Mountain, visitors will encounter experiences not found at the other viticultural areas. They will experience Red Mountain as a Viticultural Park where they will enjoy globally competitive wines as well as a range of visitor amenities.

On Red Mountain visitors will be immersed in the vineyards: They can walk with their families along interpretive paths that describe how grapes are grown and how globally competitive wines are made. They can also view the remnants of the Ice Age Floods that shaped Red Mountain and created the soils and striking topography that define the place.

The existing road system will be enhanced by the continuation of Antinori Road to Sunset Road. New two-lane paved roads will wind through the vineyards and provide loops linking the vineyards, wineries and visitor facilities. The location, scale and character of these roads will respect the existing pattern of the vineyards and the rural character of the AVA. Gateways announcing the visitor's entry into the AVA will be developed within the public rights of way at the intersections leading into the AVA. Area information and way-finding maps will be located at each gateway.

A system of non-motorized hiking, equestrian and biking trails will form a network of trails linking wineries and visitor facilities. Interpretive and way-finding signage, benches and shade areas, picnic areas, restrooms and viewpoints will be located at strategic points along the trails. These trails will connect to the potential ridgeline trail system as well as the potential Yakima River greenway and the potential rail-to-trail corridor on the western edge of the AVA. The opportunity exists to link the trail system to Benton City via the old railroad bridge across the Yakima River or via SR224 to the Benton City bridge at the interchange.

One of the guiding principles established during the planning process is to “Create Red Mountain as a model of sustainable design, construction and operations”. To address this principle, future developments on Red Mountain should be encouraged to respect the intrinsic qualities of the place and reinforce the qualities of the existing Red Mountain vineyards, wineries and wines.

As development continues on Red Mountain the area's shrub-steppe vegetation will disappear, unless a collective decision is made by landowners to be proactive in preserving areas of shrub steppe for its intrinsic beauty as indigenous flora complementary to the vineyard landscape, for its unique biology, and for its xerophytic and weed-resistant attributes. The development process should preserve and restore native shrub-steppe vegetation where such preservation and restoration complements vineyard and winery operations. These “islands” of native landscape can be an important native landscape network on Red Mountain as well as a connecting feature to the native landscapes found along the Yakima River corridor and the Red Mountain ridge. These areas of native shrub-steppe vegetation can also give visitors an opportunity to experience and better understand the integration of high-quality agricultural production and stewardship with an on-the-ground reference to the landscapes that makes the Red Mountain AVA unique.

From an agricultural practices standpoint, the challenge is to develop an appropriate sustainability system that tests and incorporates current and evolving environmentally friendly management practices. These practices should be designed to produce a managed vineyard ecosystem that enhances biological complexity while complementing and supporting vineyard operations, minimizes economic costs to the growers, and provides the Red Mountain visitor with an aesthetic, educational and environmentally satisfying experience unique to Red Mountain.

The Wine Village forms the heart of visitor's Red Mountain experience and will be located within the AVA. A centralized location will immerse the village in the surrounding vineyards and provides a trail hub. Visitors can start their visit at the Wine Village, where they can taste wines, purchase a picnic lunch to enjoy in the vineyards, stroll through the wine-related shop area, or simply rest on the village green and watch their children play. They can also enjoy the fine dining, lodging and meeting accommodations at the Wine Village. Trails and rural roads will lead from the Village to wineries nestled in the vineyards. Visitors can also eat and spend the night at several of the wineries.

The Wine Village will also be a focal point for the residents, winery and vineyard operators at Red Mountain. The Wine Village general store will provide bakery goods, coffee shop, postal substation and other amenities that will draw residents and visitors alike to the village. The village meeting facilities within the lodge can be a center for community meetings. The village green will be used for small-scale performances, wine celebrations and displays. The village could also include offices, a general store, and small working shops that supply the wineries and vineyards with products and services like corks, capsules, labels, barrels, and cellar equipment.

The Wine Village architectural and landscape elements will respect Red Mountain's rural character and reinforce the overall quality of the new development occurring within the AVA. The Draft 2007 Master Site Plan suggests a preferred location for the Wine Village. Should the land owner decide not to focus on the Wine Village development opportunity, additional sites could be identified through site selection planning efforts using the site selection criteria that were used to select the preferred site.

There are opportunities for additional visitor facilities and wine industry support facilities to be developed in Benton City, West Richland and the Tri-Cities. The recreational resources of the Yakima River corridor will also enrich the visitor's stay in the area.

The AVA will provide a wealth of interpretation opportunities for the visitor. Interpretive signage will be located along the trails and at strategic points along the road system. The interpretive center will be a focal point for the Wine Village. A demonstration vineyard with an interpretive trail will immerse visitors in rows of grape vines. Other displays will present information on how grapes are grown. The story of Red Mountain's contribution to the agricultural industry will be a part of the presentations of Washington's agricultural history and resources. Natural history information will be presented at several view points, where the visitors can view Red Mountain and the surrounding landscape and learn about the Ice Age Floods and how they shaped Red Mountain and the surrounding region. The AVA interpretive information and facilities will complement and reinforce the messages and experiences found at the Walter Clore Wine and Culinary Center in Prosser, as well as Ice Age Floods interpretive elements being developed by various federal, state, and local entities.

Figure 1-1 illustrates how elements of the Red Mountain AVA Vision would be sited to augment existing facilities.

2. MASTER SITE PLAN ELEMENTS

The Master Site Plan presents an overall vision for the future of the Red Mountain AVA. The plan builds on the success of the existing vineyards and wineries, road network, land use, land ownership patterns, and the proposed plans of several major land owners within the AVA. The Master Site Plan planning area includes approximately 5,400 acres. There are approximately 4,600 acres within the AVA. That acreage includes approximately 3,600 acres within agricultural zoning. At present approximately 1,300 acres of vineyards are planted in the AVA. Thirteen wineries are in operation at the printing of this report, with at least eight more being planned, designed or under construction. The Master Site Plan anticipates an additional 18 to 22 wineries as well as approximately 2,000 acres of new vineyards. There are several existing residential areas within the AVA. Figure 2-1 presents the distribution of the land use patterns within the AVA. Appendix B contains additional analysis maps that were developed during the Phase 1 and Phase 2 planning process.

The AVA area south of SR 224 presents a range of opportunities for vineyard and complimentary development. Currently the area is composed of clusters of residential development, a power utility substation, shrub-steppe vegetation, and a rock quarry. The land ownership pattern presents a mix of public and private lands. A gentle ridge divides the area, with the area to the south of the ridge being influenced by the proximity of Interstate 82. There is an opportunity to develop the area with a distinctive, complementary mix of residential, commercial and vineyard areas and winery dependent uses. This Rural Lands Five area could provide a range of development that compliments the Red Mountain AVA.

The challenge for this area is less about land uses than it is about water and sewer services and the application of a development process and guidelines that create a built environment that is integrated functionally and visually with and complements the scenic qualities of the Red Mountain backdrop and environment, as it is viewed from within the AVA and from the SR 224 and Interstate 82 travel corridors. This area will be one of the gateways to Red Mountain where carefully planned and designed development should be located. A concept that could be considered for this area, which has been used successfully in other areas, would be for land owners to partner to create a development master plan including all parcels within a Tourist Serving Area (TSA) or work with a master developer to create a coordinated plan for the TSA. That concept would assist in creating a coordinated design form for the area that respects and reinforces Red Mountain's qualities.

The future development of the existing Benton City / Interstate 82 interchange and the possible future Red Mountain Interstate 82 interchange at the eastern edge of the AVA, as well as the lands adjacent to the AVA, are significant to the success of the AVA. It is important that the quality and character of development of these areas be managed so that the future development reinforces the quality and character of the AVA.

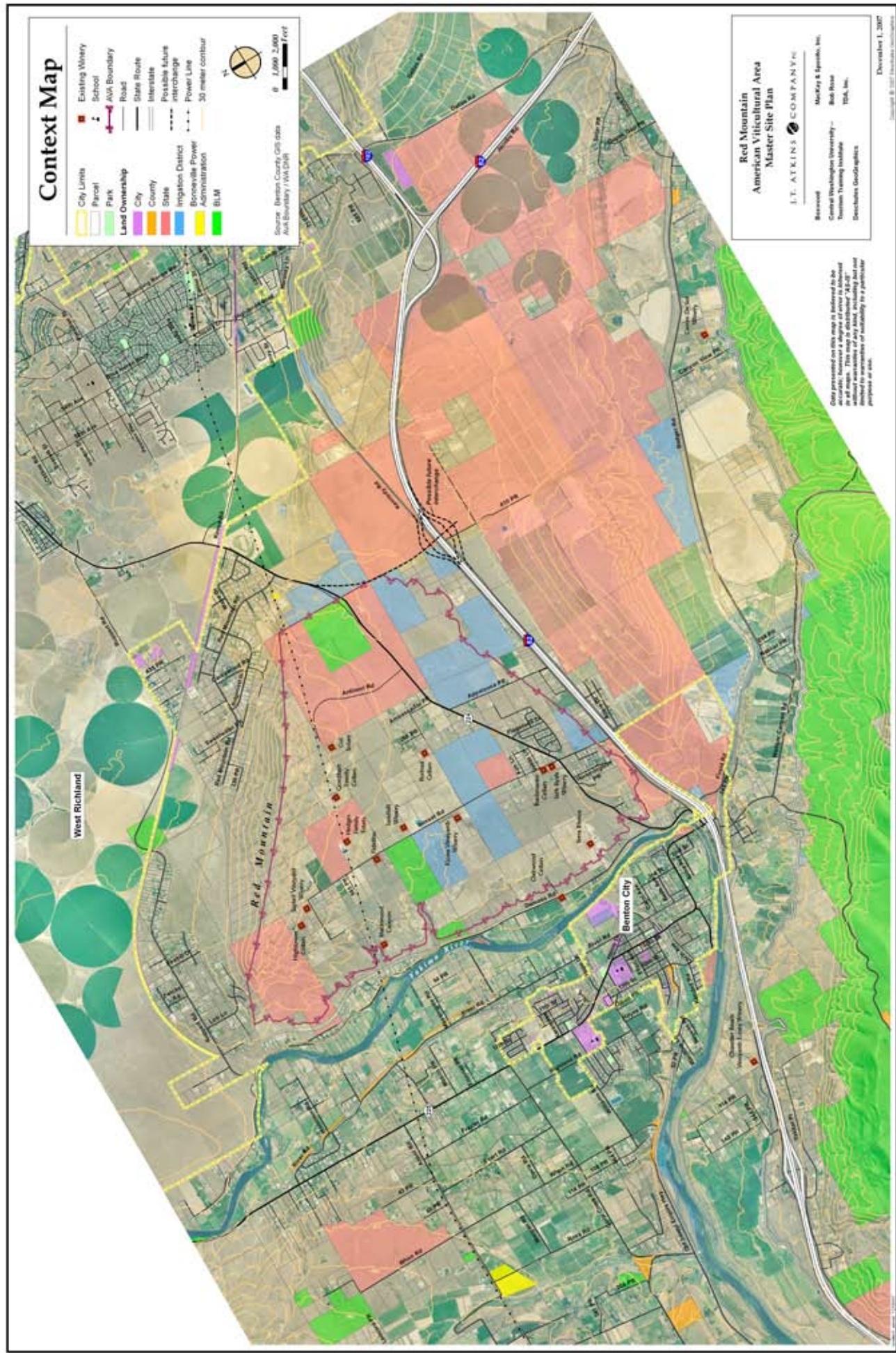


Figure 2-1. Project Context

At present the AVA is outside of the Urban Growth Areas (UGAs) for Benton City and West Richland. Several of the ideas presented in the Master Site Plan are not consistent with state planning law; others require changes to rural land use regulations. The Master Site Plan planning process has included working with Benton County planning staff; they are developing draft, zoning ordinances that will pave the way for implementing the ideas presented in the Master Site Plan.

Table 2-1 identifies the Red Mountain AVA program elements.

Table 2-1. Master Site Plan Elements	
Vineyards	
Existing	1,300 acres
Potential	2,000 acres
Total vineyards acres	3,080 acres
Wineries	
Existing	13
Proposed	8
Potential	18 – 22
Total wineries	40 – 42
Wine support facilities	
Wine purchase pickup point	At the Wine Village
Wine and compatible sales	At the Wine Village
Wine support	In the adjacent communities, the wine village, the Rural Lands Five Designation, and the Tourist Serving Area.
Gateways at road entries into the AVA	
	Welcome and way-finding information located on public rights of way
Circulation	
Proposed 2-lane roads	2 miles
Proposed multi-use trails (hiking, equestrian and biking)	20 miles
Education / Discovery	
Way-finding information	At gateways to the AVA and at trail and road intersections within public rights of way
Interpretive information	At the Wine Village, interpretive view points and on trails
Interpretive trails	A series of trails leading visitors to viewpoints, and immersion trails in an interpretive vineyard. The interpretive elements would focus on the natural history of Red Mountain, Washington agricultural history and how to grow grapes. Interpretation of wine making could occur within individual wineries.
Visitor Experiences and Amenities	
Wine tasting	At individual wineries and at the Wine Village
Picnic supplies	At the Wine Village
Picnic areas	At the Wine Village and on trails
Trails	Connecting Wine Village to wineries and view points
Trail amenities	Benches, shade areas, restrooms located at strategic points along the trails.
View Points	At strategic points along the trails
Lodging	Wine Village Inn - 20 to 50 rooms and at approximately 5 - 10 wineries with an assumed 4 rooms each (20 - 40 rooms)
Dining	At Wine Village and at several wineries
Conference facilities	At Terra Blanca. Small scale meeting facilities within the Wine Village Inn

Table 2-1. Master Site Plan Elements

Event space	At Terra Blanca, and the Wine Village green (small-scale events)
Restrooms	At wineries, on trails and at the Wine Village
Parking	At wineries and at the Wine Village
Residential condominiums	Located above the shops and artisan studios.
Benton City, West Richland and Tri-Cities will be focal points for a majority of visitor related facilities	The attraction of Red Mountain will provide visitor service facilities development opportunities for adjacent land owners and communities

WINE VILLAGE

The Red Mountain AVA Site Master Plan presents a vision for a “viticultural park,” a unique concept that reinforces the existing and future qualities of the Red Mountain AVA. In many ways the AVA is modeled after a state or national park, where visitors are immersed in the environmental qualities of the area. Generally at these parks (as well as at Red Mountain), a visitor welcoming center is an important element. The Wine Village is the welcoming center for Red Mountain. At the Wine Village visitors can learn more about what they are going to see and experience, plan their visit, and find food, restrooms and other support facilities. The Wine Village will also be a focal point for the Red Mountain community where Red Mountain residents can take advantage of the amenities found at the Wine Village.

The Red Mountain Wine Village concept diagram (Figure 2-2) presents the general character of the Wine Village. As presented in Figure 2-2, the Wine Village “foot print” occupies approximately 21 acres (including building foot prints, village green, parking, entry and perimeter roads and small vineyard areas) within an 80-acre parcel of land west of Sunset Road. As indicated in the diagram, the remaining site area could be in agricultural crops. The Wine Village diagram is conceptual and presents initial ideas, program elements and opportunities that could be found at the Wine Village. The final design character, program elements, land use mix and size of the Wine Village will be determined during future design phases.

Wine Village Elements

Red Mountain’s Wine Village will provide welcoming, educational, recreation and support functions. The Wine Village will be connected to Sunset Road by a winding entry drive that immerses visitors in vineyards as they approach the village. The interpretive center will be a focal point that visitors first experience as they enter the village. At the interpretive center visitors can plan their day on Red Mountain. In addition, interpretive displays will present information on how Red Mountain grapes are grown. Additional displays will illustrate how the Ice Age Floods helped shape the Red Mountain landscape. Elements of the native shrub-steppe landscape will be displayed and complemented by plantings of native and desert-adapted, water conserving vegetation. Visitors can also walk along a loop trail through the demonstration vineyard where the Red Mountain grape varieties have been planted.

In addition to the interpretive center, visitors can enjoy food and refreshments found at several restaurants, stroll through a range of wine related shops, visit art galleries and interact with artisans as they create their work. Restrooms and other visitor amenities will also occur within



Figure 2-2. Wine Village

the Wine Village. The Wine Village Inn will provide visitors with the opportunity to extend their stay on the mountain. The Inn could include small meeting rooms for small conferences and retreats. Service access to the shops and Inn will be from the road that loops around the perimeter of the village.

The village is intended to provide services and amenities for both Red Mountain residents and visitors. A “post office” (central location for mail boxes) located within the general store will provide a convenient place for residents and businesses to pick up and deliver mail. This focal point will also serve as an informal meeting place for mountain residents. Other village amenities will include a grocery and deli, coffee and retail shops. The village could also include offices, and small working shops that supply the wineries and vineyards with products and services like corks, capsules, labels, barrels, and cellar equipment.

The village elements will be clustered around a village green. The remaining sides will be left open to provide views of Red Mountain, vineyards and the Horse Heaven Hills as well as providing openings for cold air and surface water drainage from the vineyards located upslope from the village. Limited parking is located around the village core to provide disabled parking (ADA) as well as parking adjacent to the shops. Additional parking will be located at the Inn and the large parking lot adjacent to the entry road. Care has been taken to locate the central parking area in an area that allows for adequate visual screening. The central parking area will be connected to the village by a series of pedestrian trails.

The village green is the second focal point for the village. Here visitors can rest or picnic in the shade of the trees that define the park space or enjoy to small-scale performances.

The Wine Village design should include adequate space for plazas, outdoor dining, wide sidewalks and street trees that will enrich the architectural character of the village. The architecture should reflect the building character and quality found at Red Mountain and meet the commercial development design guidelines for the wine village. A possible development scenario could be for the land owner to partner with a commercial developer or master developer to create a well-coordinated development that fits the Red Mountain quality and context. This process has been used successfully in many communities and usually involves the land owner developing a Request for Proposals (RFP) that presents the land owner’s vision for the future development and other project requirements. Interested developers present their credentials, a development concept, land owner/developer partnership structure, pricing, and other required information. The land owner can use the RFP information in selecting the developer that they desire to work with.

The Wine Village will function as a hub for the hiking, equestrian and biking trails that connect the village to view points, wineries and regional trails. Visitors can park at the village and use the trails for recreation as well as access to the wineries. On peak visitor week ends the Wine Village could serve as a point of departure for a shuttle transportation system that could transport visitors to the wineries.

Table 2-2 lists the elements proposed for the Wine Village.

Table 2-2. Wine Village - Conceptual Program

Use	Approx. Size (Sq. Ft.)	Description
General store	4,500	A little bit of everything including, "post office", winemaking supplies from a reputable name such as The Complete Winemaker.
Grocery/deli	3,000	"Oakville" style with wine, gourmet food products, picnic supplies, fresh baked goods, hand-made cheeses and a complete deli where freshly crafted sandwiches and salads can be made to order.
Four star restaurant	3,000	Seating for 50, fine dining.
Family restaurant	3,000	Seating for 50, family dining.
Coffee shop	750	Espresso, lattes, inside seating for 8 at small tables, outside seating for 8.
Four star inn	12,000-30,000	Reception, lobby, 20 to 50 rooms, conference/meeting rooms, spa/work out area, offices and support spaces.
Retail/gift store	3,000	Visitors like to shop...
Retail/gift store	3,000	Visitors like to shop...
Art gallery	3,000	Art pieces for sale.
Artisan studios	6,000	Studios and work space that allow visitors to watch art production and discuss process with artists.
Bicycle rental	1,500	Day rental of trail bikes.
Residential condominiums	15,000	10 units at 1,500 SF each two bedrooms, two baths, decks located above the shops and artisan studios.
Interpretive center	3,000	Present information on the Ice Age Floods and local agriculture including viticulture - Potential State Parks facility. Restrooms, display/exhibit area, small meeting/presentation space, administration office and support space.
Demonstration vineyard	43,560	Integral part of the interpretive experience. Multiple varieties that grow well on Red Mountain.
Village Green	30,000	Water conserving lawn with shade trees along edges, open in the middle and along two sides with views to Red Mountain and demonstration vineyard. The Green can be used for small scale performances and other events.
Playground	1,500	Equipment for young people and seating for adults located within the Green.
Picnic shelter (s)	600	Located on the Village Green.
Visitor restrooms	1,000	Located close to the Village Green within the shop area. Events may require additional temporary facilities.
Streets/sidewalks		13-foot-wide sidewalks, some diagonal street parking interspersed between sidewalk bump outs, a one way drive aisle flows around the green. Parking is included in front of the shops to provide easy access parking for the commercial activities. Approximately 26 parking spaces.

Table 2-2. Wine Village - Conceptual Program

Use	Approx. Size (Sq. Ft.)	Description
Trailhead		Parking and trailhead function for trail uses.
Parking - accessible from Sunset Road		Approximately 146 parking spaces. A bulk of the parking, for the inn, bicycle shop and visitors to Red Mountain that are touring, to be located behind the buildings especially at the inn (approximately 15 parking spaces). All parking areas will include water gardens for surface water retention, strong pedestrian connections and distinctive landscape including native plants.
Natural areas		Part of the site will include natural vegetation habitat areas related to the cold air drainages. These natural areas will be enriched by interpretive trails and signage.
Village operations, maintenance and storage area	2,000	Office and maintenance and materials storage area. Could include first aid station if appropriate.

The Draft 2007 Master Site Plan suggests a preferred location for the Wine Village. Should the land owners decide not to realize the Wine Village development opportunity, additional sites could be identified through site selection planning efforts using the site selection criteria used to select the preferred site.

During the Phase 1 Concept Plan planning process, two alternatives were developed, each presenting a range of land use and visitor facility location concepts. A major difference discussed during the alternative evaluation process was the concept of a dispersed versus a central visitor services and experience concept. Participants in the planning process discussed the assets and liabilities of the each of the concepts and decided that the central concept was most appropriate for Red Mountain. The consultant team used the criteria presented below in selecting the Wine Village site presented in the Master Site Plan.

Wine Village Site Selection Criteria

The proposed site for the Wine Village was selected during the Phase 1 Conceptual Plan planning process using the site selection criteria presented below.

- Land marginal for growing grapes – least suitable soils and cold air drainage areas. This is a threshold criteria that must be met before considering other site selection factors
- Site topography suitable for village – flat to slight slopes
- Centrally located - providing opportunities for a distinctive visitor experience where the village is immersed in vineyards and not located adjacent to or close to roads
- A site that is visible while not being visually dominant

- A site that provides views to Red Mountain, Horse Heaven and Rattlesnake Hills, the surrounding vineyards and the valley below
- Centralized location – providing “hub” opportunities for trails, parking and shuttle transportation systems and provides a focal point for visitor activities
- Diversity in trail experiences - river, vineyards, and different habitat type views
- Ability to screen/hide parking and support facilities

INTERPRETIVE OPPORTUNITIES - CONNECTING PEOPLE WITH PLACES

The intent of interpreting natural and cultural history of an area is to connect and involve people with the place. At Red Mountain an exciting range of interpretive opportunities exists to present information to visitors about how grapes are grown and wine is made. In addition, there is the opportunity to interpret the Ice Age Floods and how they shaped Red Mountain during the Ice Age.

The interpretive center located at the Wine Village will be hub of interpretive activities. A range of presentation technologies, including graphic panels, video presentations and models will be located at the interpretive center and adjacent demonstration vineyard. Trails radiating from the Wine Village will connect the visitors to view points and interpretive signs that present information better told where the visitor is immersed in the landscape that is being interpreted.

A second interpretive point will be located along the trail system. At this point interpretive graphics and models, located within an interpretive kiosk, could be used to present how the Ice Age Floods shaped Red Mountain and how the resulting natural conditions created a place for creating globally competitive grapes and wines. An ideal location for this second interpretive point would be within or close to the glacier boulder (erratic) field near the base of Red Mountain. The location of the trails and interpretive opportunities is presented in Figure 1-1. Individual wineries could interpret how wine is made.

There are a number of existing and proposed interpretive facilities within the region that provide the opportunity to develop an interpretive network where facilities reinforce the messages presented at the other facilities. Such a network will encourage visitors to visit the other facilities and deepen their appreciation and enjoyment of the region as a whole. It is important that the interpretive information presented at Red Mountain be coordinated with the proposed Walter Clore interpretive facility to be developed in Prosser and at other Ice Age Floods interpretive elements being developed by various federal, state, and local entities.

The following information outlines the many of the interpretive opportunities at Red Mountain.

Goals

Use recreational and interpretive opportunities to:

- Immerse visitors in sense of place and romance of wines.

- Create intellectual linkages to off-site viticultural, agricultural and Ice Age Floods interpretive facilities.
- Create layers of experiences that lengthen and enrich the visitor's time at Red Mountain.

Principles

- Keep it simple – the less words and themes the better.
- Do not let the interpretive elements dominate the landscape.
- Relate all to humans –wine history, site selection criteria – why Red Mountain and the history of wine development on Red Mountain

Themes

- Grapes and wines
- What does it mean to grow grapes and create wine
- The place was formed by the Ice Age Floods
- Landscape Features
- Ice Age Interpretation - Tie to Ice Age Floods trail experience
- Tie Ice Age Floods to the terroir of the place – latitude, climate, soils, aspect, slopes, erratic (soils and rocks came from Montana)
- Great natural forces shaped what you see – Ridge system and Ice Age Floods
- Native shrub - steppe landscape experience
- Wildlife Habitat
- Wild flowers
- Native American History

Presentation systems

- Printed material
- Interpretive panels in the interpretive center
- Video presentation of growing grapes and creating wine
- Interpretive kiosks with panels – at points of interest
- Overview point (great view of Red Mountain) where Red Mountain geology (uplift and ice age floods) shaped the area for excellent wines (graphic depicting the wave coming over the top of Red Mountain) – soils and glacial boulder (erratic) deposition on lee side of Red Mountain can be told

- Direct visitors to erratic deposition and soil cross section at the overview interpretative point
- Stand-alone interpretive panels – at points of interest
- Demonstration vineyard with agricultural equipment
- Physical exhibits
- Soil cross sections
- Model of Red Mountain and Ice Age Floods
- Audio - Tapes and car radio

TRANSPORTATION

The Master Site Plan planning process has included the analysis of existing and future traffic conditions within the Red Mountain AVA focusing on both the existing traffic volumes and the 2025 traffic volumes related to the planned development of the AVA. SR 224 provides primary access to the AVA.

The traffic analysis provides estimates for traffic conditions for the average High Season Weekend Day and for a Major Event Weekend Day that were defined as part of the visitor volume analysis (see Appendix C).

Traffic conditions are expressed in terms of their impact on levels of service (LOS). Levels of service are descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which indicates good conditions with little or no delay, to LOS F, which indicates stop-and-go conditions with frequent and lengthy delays. More specifically, level of service criteria for un-signalized intersections are as follows:⁴

Level of Service	Average Delay (seconds/vehicle)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.00

High Season Weekend Day

Existing (2007) Traffic Volumes Along SR 224

Figure 2-3 shows existing 2007 turning movements at intersections along SR 224. These traffic counts were conducted by Benton County Public Works in March 2007. These were weekday, mid-afternoon counts (mid-afternoon is expected to be a peak time for AVA traffic). Saturday mid-afternoon counts were assumed to be nearly identical.⁵

Year 2025 Background Traffic Volumes

Figure 2-4 shows estimated year background 2025 turning movements without the planned development of the Red Mountain AVA. These 2025 background volumes were developed by increasing the existing 2007 volumes by 3% per year. The growth percentage is based on the continuation of average annual traffic volume increases on SR 224 near Red Mountain Road since 1996.

Red Mountain AVA Population – High Season Weekend Day

A review of the visitor volumes data, existing traffic volumes, and visitor volume projections was done to estimate the anticipated traffic volumes associated with the proposed AVA development. Table 2-3 presents 2025 visitor numbers and the resulting mid-afternoon traffic volumes.

- Red Mountain AVA Master Site Plan information was provided by J.T. Atkins & Company PC⁶
- The number of visitor parties (1,500) is based on market analysis information provided by Dr. Barbara Masberg of Central Washington University (see Appendix C).⁷ An average party size of 2 persons has been assumed. The projected visitor volumes were increased by adding the results of a “what if” analysis process where the number of core wine drinkers were identified to be increasing at a rate of 8% per year while marginal wine drinkers numbers are declining.⁸
- Vehicle trips are estimated for parties to and from Puget Sound and other locations, and for day visitors, overnight visitors and employees.
- During the assumed weekend day, approximately 225 employees are projected to be on site.

These projections assume that the AVA is developed as shown on the Master Site Plan (see Figure 1-1) for the area north of SR 224. The character of the potential Tourist Serving Area (TSA) and supporting agricultural and residential development south of SR 224 has not been defined to a point where traffic projections can be developed. This analysis does not include traffic volume projections associated with this area at full development.

2025 Traffic Volumes, Saturday

Figure 2-5 shows estimated 2025 project-only turning movement volumes using the visitor volume projections presented in Table 2-3. Figure 2-6 adds the project-only volumes of Figure 2-5 to the 2025 Background volumes of Figure 2-4 for an estimate of total peak hour traffic volumes in 2025.

2025 Intersection Levels-of-Service

Table 2-4 shows estimated intersection levels-of-service (LOS) for 2007 Existing, 2025 Background only, and 2025 with the planned development of the AVA. Table 2-4 presents LOS

information for individual movements at each intersection and also for the overall intersection. Generally, with the exception of the Interstate 82 East bound off ramp and Webber Road, and the SR 224 / SR 225 intersection, the LOS conditions at each of the analyzed intersections are very good. The LOS issues at the two intersections occur when only the 2025 background levels are considered as well as when both 2025 Background with AVA development volumes are considered.

At the Interstate 82 Eastbound Off-Ramps, the eastbound left turn, exiting Interstate 82 toward Benton City, currently operates at LOS C and drops to LOS F with 2025 background growth. It continues at LOS F with the project added. Overall intersection operation is at LOS A for all three conditions. The critical left turn does not improve from LOS F when turn lanes are added and the overpass is widened to allow a center two-way left-turn lane. By adding a semi-actuated signal with a 60-second cycle, this intersection would operate at an overall LOS B with the critical left turn at LOS C for both the 2025 Background and 2025 Background plus AVA development traffic.

At the SR 224 / SR 225 intersection, the westbound left turn from SR 224 toward Interstate 82 also currently operates at LOS C and drops to LOS F with 2025 background growth. Overall intersection operation drops from the existing LOS A to LOS D with background growth and to LOS E with the proposed AVA development traffic volumes added. The Washington State Department of Transportation (WSDOT) is considering a modern roundabout as one alternative for this location. Mitigating this intersection with a roundabout with an outside diameter of 55 feet and an inside diameter of 25 feet allows all movements to operate below capacity at 55.2% or LOS B for a roundabout. The proximity of the Interstate 82 ramps could be a problem, however, for two reasons:

- The time for drivers to perceive the roundabout layout may be too limited
- Under certain conditions, traffic could back up into the roundabout, causing a LOS breakdown of roundabout operations

This situation requires further analysis at a more detailed level. Some possible solutions could include a revision to the SR 224/SR 225 intersection and/or use of a traffic signal.

AVA Roads

This traffic volume analysis of roads within the AVA found that with the projected volumes as noted, the two-lane road configuration for existing and future internal roads will be adequate to carry the existing and projected traffic volumes. Later, more detailed, site analysis may show a need for added turn lanes at certain key intersections.

Summary

During a High Season Weekend Day, 1,500 parties (two people within a single vehicle) are expected to visit the AVA. Of these, about 45% (675 parties) of the total number of parties are expected to be on-site at one time. The traffic analysis reviewed the Level of Service (LOS) for nine intersections. The results of the analysis indicate that only two of the intersections along SR

224 failed, both for Background (existing) Conditions without the planned development for the AVA by 2025 and for Background Conditions plus the planned 2025 AVA development. The failing intersections were at the end of the Benton City Interstate 82 eastbound off-ramp at the intersection with Webber Road, and at the intersection of SR 224 / SR 225. Implementing mitigating measures can bring both intersections back to acceptable levels of service.

Major Event Weekend Day

Finally, traffic conditions for a Major Event weekend with three to four times as many parties visiting the AVA were analyzed.

The impact of increased traffic that could occur on major special event weekends that occur periodically throughout the year was evaluated. Table 2-5 shows 2025 visitor volume projections and the resulting mid-afternoon traffic volumes for a major event day that is about 4 times the level of the average high-season weekend day. Except for the increase in the number of parties, based on market information provided by Dr. Barbara Masberg of Central Washington University (see Appendix C), the assumptions on distribution of these parties are the same as those associated for the High Season weekend day.

Figure 2-7 presents the 2025 AVA traffic turning movements traffic. Figure 2-8 shows total 2025 traffic with AVA proposed development traffic added to 2025 Background traffic volumes.

Table 2-6 reproduces the information in Table 2-4, but adds two columns with results for the Major Event Weekend Day. Traffic operational considerations include:

- The roundabout at SR 224/225 drops to LOS F with 99.1% utilization. The roundabout will function under these conditions, yet with considerable delay. As described for the High Season Weekend day, there may be problems with the roundabout because of the proximity of the Interstate 82 ramps.
- Police officers may be needed at peak times at other intersections along SR 224 in order to direct traffic turning movements. With these major events occurring only about five - six times per year, mitigation through intersection redesign of individual intersections would be too expensive to justify the intersection changes.
- The southbound approach at SR 224/Sunset changes from LOS C to LOS F for the peak event periods. Potential mitigation includes widening this approach to add a 150-foot southbound left turn. The left turn continues to operate at LOS F, but the right turn operates at LOS B. Directing more traffic to the Antinori Road intersection may improve conditions during a major event by distributing the traffic volumes more evenly throughout the AVA. A traffic officer stationed here directing traffic flows during a major event weekend would assist in traffic flows.
- A level of service change occurs at the southbound left-turn lane at the Antinori Road, where the LOS changes from LOS B to LOS F with peak event volumes. Again, adding a 150-foot southbound left-turn lane improves only the level of service

at the right-turn lane. A traffic officer stationed here for a peak event would assist in traffic flows.

- A similar problem occurs at the SR 224 / Keene Road intersection. The northbound left turn volume is not, however, related to the project. This movement drops from LOS C to LOS F as a result of the increase in conflicting through traffic on SR 224. Again, adding a northbound left-turn lane improves the right turn level of service from F to C, yet the left turn lane remains at LOS F.
- The same left-turn issue arises at the SR 224 / Rupert Road intersection. The southbound left turns are not related to the project, yet conflict with the higher through volume along SR 224. Adding a separate southbound left turn lane here again improves the right turn LOS from F to A, but the left turn remains at LOS F.
- Widening the entire length of SR 224 to include a two-way left turn lay could resolve some of these issues, but would be expensive and probably not justified by these infrequent major event weekends.
- One option to consider is the use of off-site parking and a shuttle bus system to reduce the volume of individual vehicle traffic flowing through the AVA intersections. Satellite parking could occur at parking areas associated with the Tourist Serving Area or other commercial/industrial areas within the cities that could have surplus parking available on major event weekends. Buses could bring visitors to the Wine Village as well as to individual wineries.

With the exception of traffic flow management or added turn lanes described above, the 2-lane internal roads will be adequate to serve the projected volumes associated with major event weekends in both the Background and Background plus 2025 projected AVA development conditions.

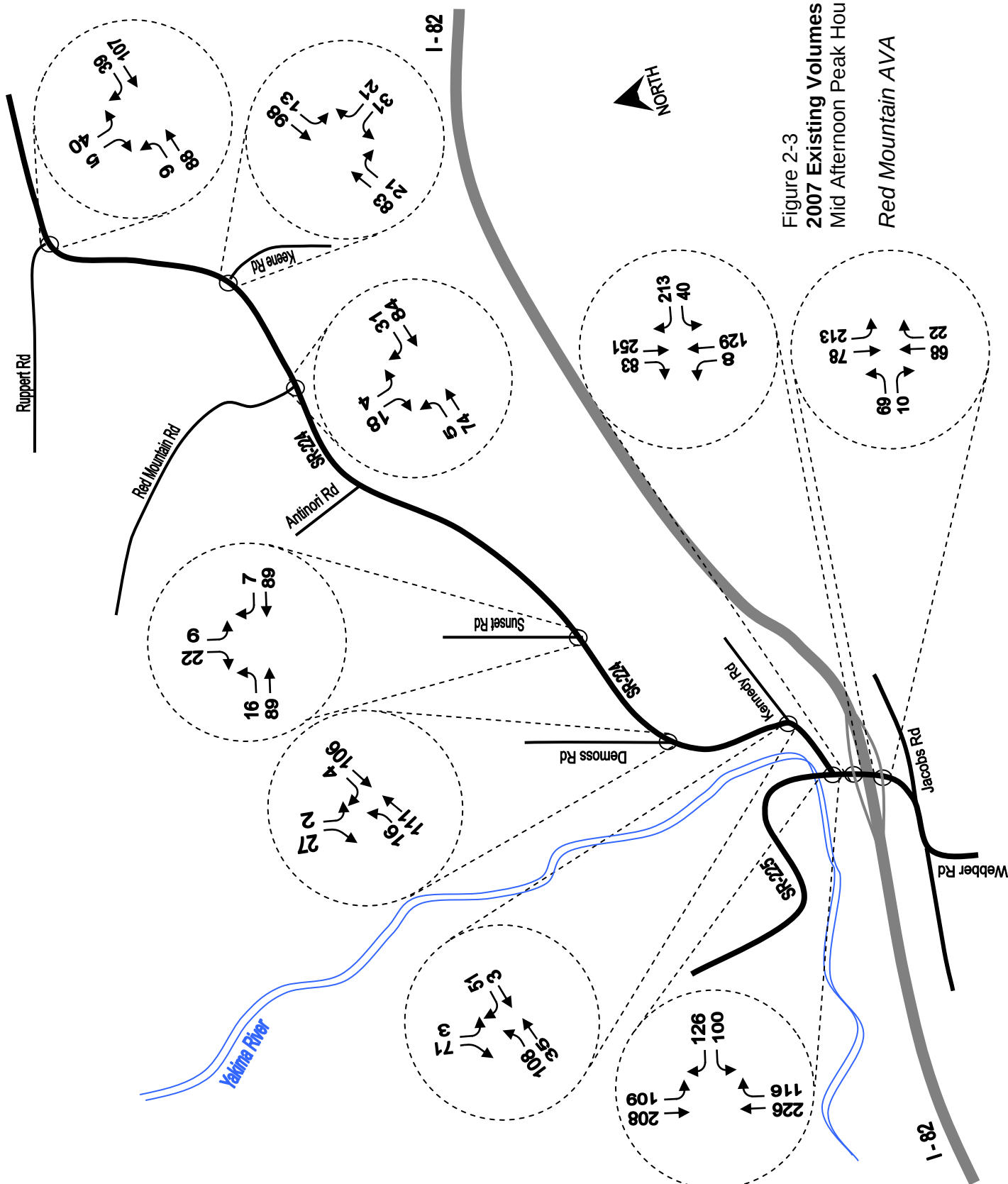


Figure 2-3
 2007 Existing Volumes
 Mid Afternoon Peak Hour
 Red Mountain AVA

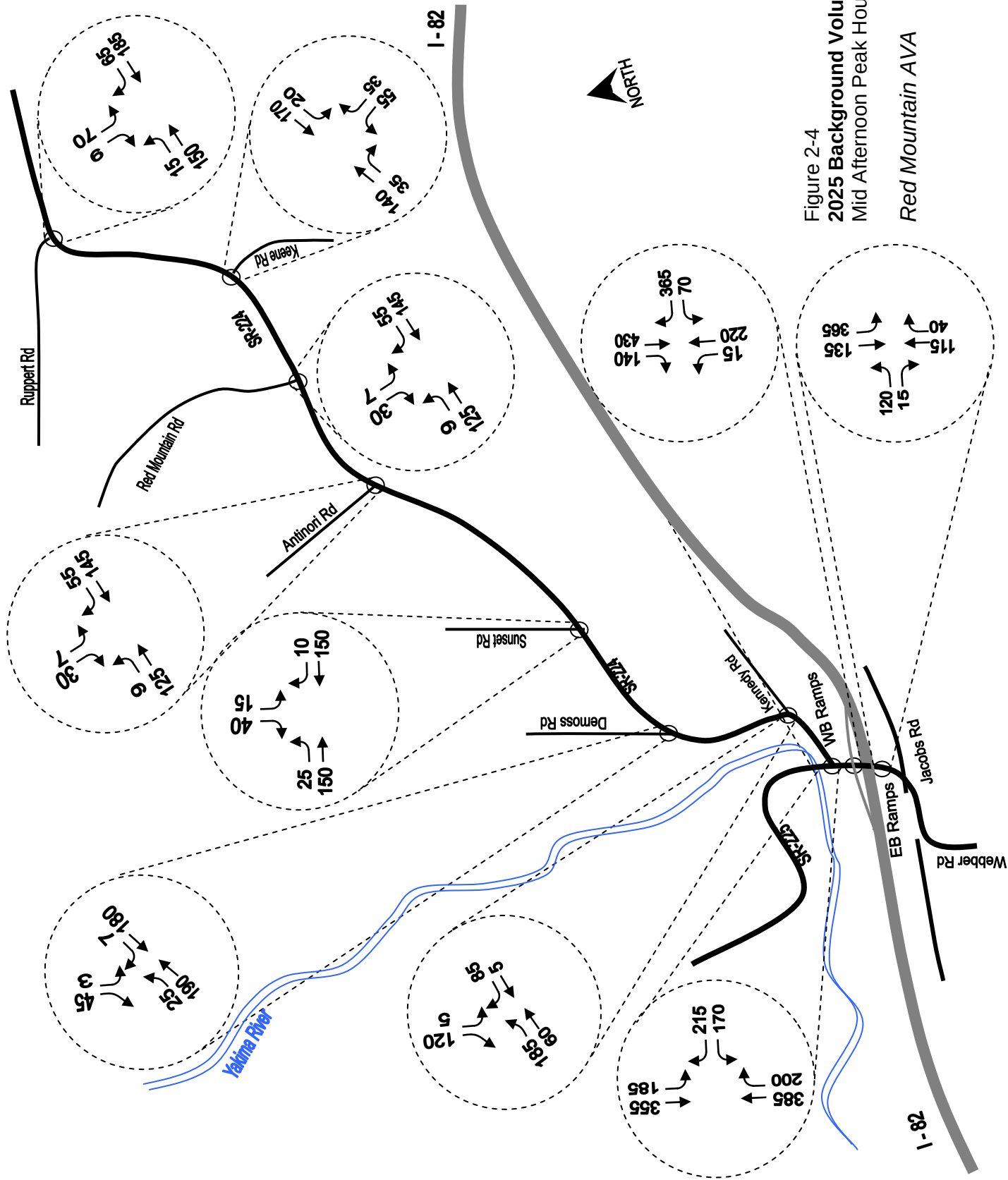


Figure 2-4
 2025 Background Volumes Only
 Mid Afternoon Peak Hour
 Red Mountain AVA

Day of week: Saturday
Scenario: 2025, Core Wine Drinkers +8% per year (purple line 45)
Party size: 2 persons
Time: 3-4 PM

GUEST PARTIES			
	Total parties for day =	1,502	Ref. 3, page 1 line 45
	Lodging units on site =	120	
	Lodging occupancy =	80%	
	Lodging on site =	96	parties

TDA Inc., 17-May-07 Revised: 24-Jul-07

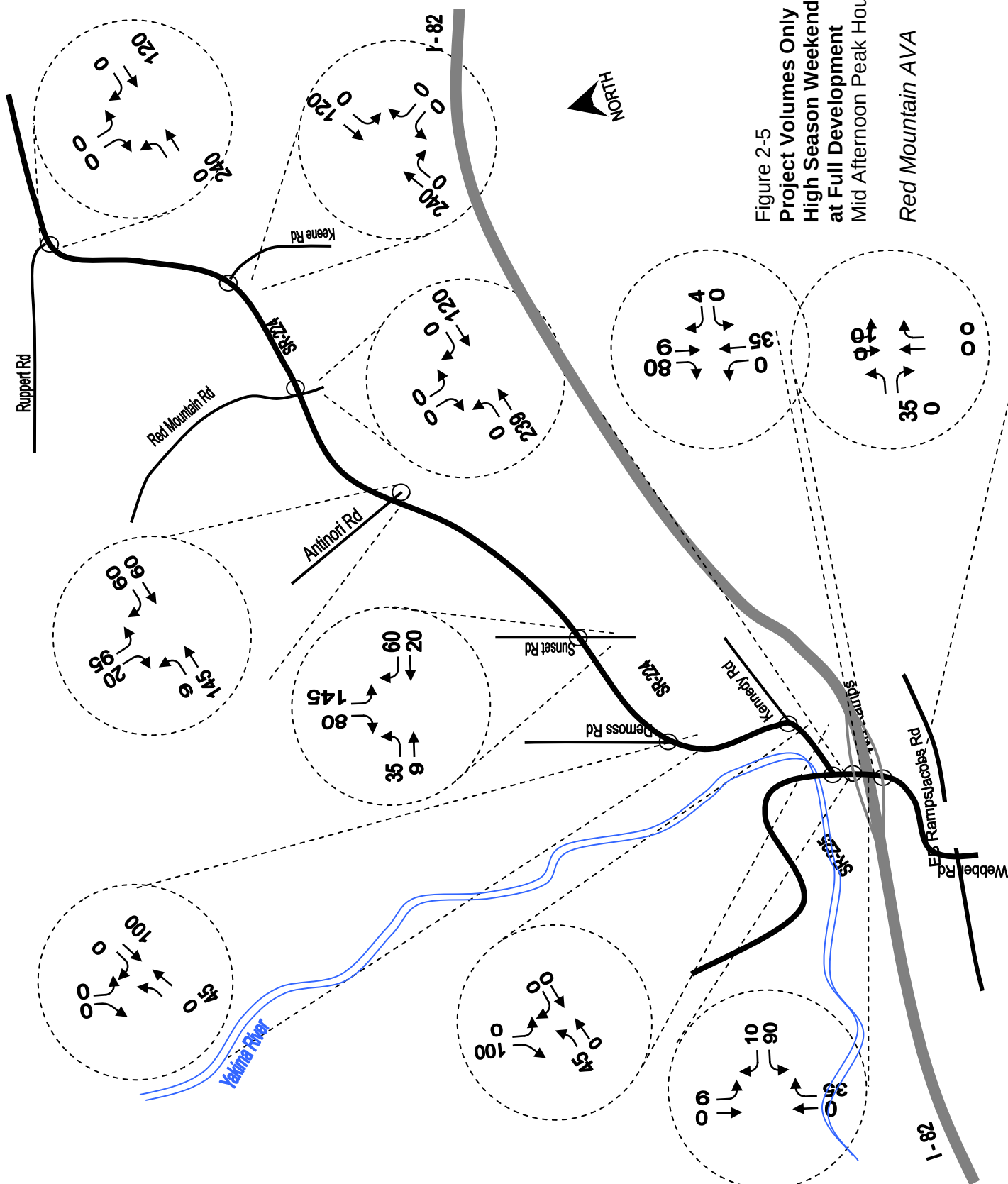


Figure 2-5
 Project Volumes Only
 High Season Weekend
 at Full Development
 Mid Afternoon Peak Hour Volumes
 Red Mountain AVA

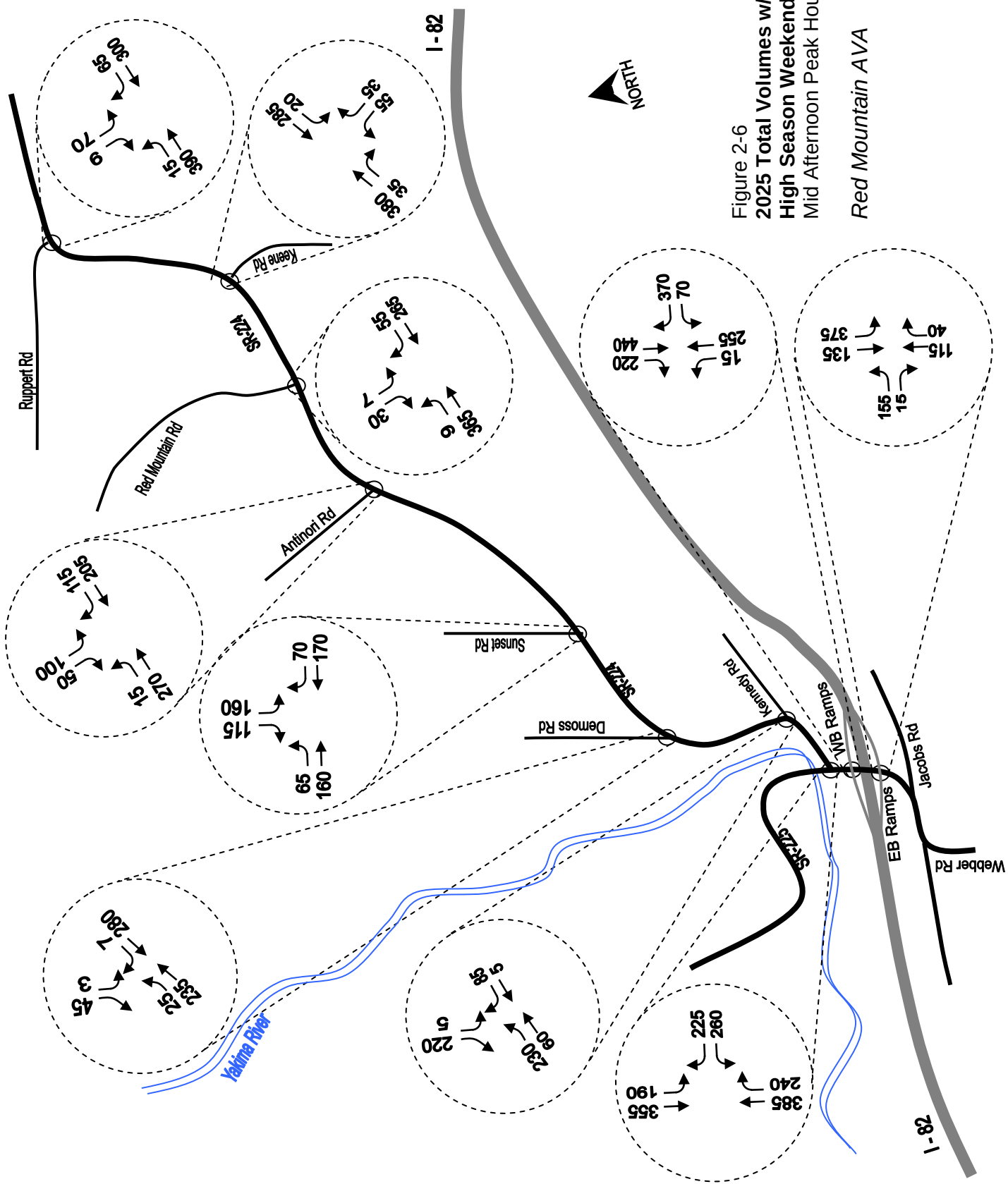


Figure 2-6
 2025 Total Volumes w/ Project
 High Season Weekend
 Mid Afternoon Peak Hour
 Red Mountain AVA

Table 2-4
High Season Weekend Day, Mid-Afternoon Peak Hour
Intersection Level of Service (seconds of delay)
Red Mountain AVA -- Washington

<i>Intersection and Critical Movements</i>	<i>Approach Priority</i>	<i>Approach Control</i>	<i>2007 Existing Mid Afternoon Peak Hour</i>	<i>2025 Mid Afternoon Pk Hr Background Only</i>	<i>2025 Mid Afternoon Pk Hr w/ Project at Buildout</i>	<i>2025 Mid Afternoon Pk Hr Total w/ Mitigation</i>
I-82 EB Off Ramp & Webber Rd			Unsignalized	Unsignalized	Unsignalized	Signalized
Eastbound Left	minor	Stop	C (18.2 sec.)	F	F	C (22.8 sec.)
Eastbound Right	minor	Stop	A	A	A	A
Northbound Thru	Major	Free	A	A	A	A
Northbound Right	Major					
Southbound Left	Major	Free	A	A	A	A
Southbound Thru	Major					
Average Intersection Delay sec/veh			6.7 sec.	19.1 sec.	37.8 sec.	10.7 sec.
Overall Intersection LOS			A	A	A	B
I-82 WB Off Ramp & Webber Rd			Unsignalized	Unsignalized	Unsignalized	
Westbound Left	minor	Stop	B (12.9 sec.)	C (21.6 sec.)	D (25.2 sec.)	
Westbound Right	minor	Stop	B (10.3 sec.)	B (13.8 sec.)	B (14.9 sec.)	
Northbound Left	Major					
Northbound Thru	Major	Free	A	A	A	
Southbound Thru	Major	Free	A	A	A	
Southbound Right	Major					
Average Intersection Delay sec/veh			3.8 sec.	5.4 sec.	5.6 sec.	
Overall Intersection LOS			A	B	C	
SR 224 & SR 225		T intersection	Unsignalized	Unsignalized	Unsignalized	Roundabout
Westbound Left	minor	Stop	C (23.3 sec.)	F	F	Single-Lane Roundabout: Intersection Capacity Utilization
Westbound Right	minor	Stop	B (10.8 sec.)	C (16.3 sec.)	C (17.2 sec.)	
Northbound Thru	Major	Free	A	A	A	
Northbound Right	Major					
Southbound Left	Major	Free	A	A	A	
Southbound Thru	Major					
Average Intersection Delay sec/veh			5.8 sec.	33.1 sec.	101.2 sec.	55.2%
Overall Intersection LOS			A	D	E	B
SR 224 & Kennedy Rd		Wye intersection	Unsignalized	Unsignalized	Unsignalized	
East to North Left	Major	Free	A	A	A	
Eastbound Right	Major	Free				
South to West Thru	Major	Free	A	A	A	
South to East Left	Major	Yield				
East to North Right	minor	Stop	A	B (10.2 sec.)	B (10.6 sec.)	
East to West Thru	minor	Stop				
Average Intersection Delay sec/veh			2.0 sec.	2.1 sec.	1.7 sec.	
Overall Intersection LOS			A	A	A	
SR 224 & Demoss Rd		Wye intersection	Unsignalized	Unsignalized	Unsignalized	
Eastbound Left	Major	Yield				
Eastbound Thru	Major	Free	A	B (10.1 sec.)	B (10.9 sec.)	
Westbound Thru	Major					
Westbound Right	Major	Free	A	A	A	
Southbound Left	minor	Stop	B (11.2)	B (13.8)	C (18.8)	
Southbound Right	minor	Stop				
Average Intersection Delay sec/veh			8.6 sec.	9.3 sec.	9.9 sec.	
Overall Intersection LOS			A	A	A	
SR 224 & Sunset Rd		T intersection	Unsignalized	Unsignalized	Unsignalized	
Eastbound Left	Major	Yield				
Eastbound Thru	Major	Free	A	A	A	
Westbound Thru	Major	Free	A	A	A	
Westbound Right	Major					
Southbound Left	minor	Stop	A	A	C (16.5)	
Southbound Right	minor	Stop				
Average Intersection Delay sec/veh			1.8 sec.	2.0 sec.	6.9 sec.	
Overall Intersection LOS			A	A	A	

Table 2-4
High Season Weekend Day, Mid-Afternoon Peak Hour
Intersection Level of Service (seconds of delay)
Red Mountain AVA -- Washington

<i>Intersection and Critical Movements</i>	<i>Approach Priority</i>	<i>Approach Control</i>	<i>2007 Existing Mid Afternoon Peak Hour</i>	<i>2025 Mid Afternoon Pk Hr Background Only</i>	<i>2025 Mid Afternoon Pk Hr w/ Project at Buildout</i>	<i>2025 Mid Afternoon Pk Hr Total w/ Mitigation</i>
SR 224 & Antinori Rd		T intersection	Unsignalized *	Unsignalized	Unsignalized	
Eastbound Left	Major	Yield	A	A	A	
Eastbound Thru	Major	Free	A	A	A	
Westbound Thru	Major	Free	A	A	A	
Westbound Right	Major		A	A	A	
Southbound Left	minor	Stop	A	A	B (13.9 sec.)	
Southbound Right	minor	Stop				
Average Intersection Delay sec/veh			1.1 sec.	1.2 sec.	1.2 sec.	
Overall Intersection LOS			A	A	A	
SR 224 & Red Mountain Rd		T intersection	Unsignalized	Unsignalized	Unsignalized	
Eastbound Left	Major	Yield	A	A	A	
Eastbound Thru	Major	Free	A	A	A	
Westbound Thru	Major	Free	A	A	A	
Westbound Right	Major		A	A	A	
Southbound Left	minor	Stop	A	A	B (11.0 sec.)	
Southbound Right	minor	Stop				
Average Intersection Delay sec/veh			1.1 sec.	1.2 sec.	0.7 sec.	
Overall Intersection LOS			A	A	A	
SR 224 & Keene Rd		T intersection	Unsignalized	Unsignalized	Unsignalized	
Eastbound Thru	Major	Free	A	A	A	
Eastbound Right	Major		A	A	A	
Westbound Left	Major	Yield	A	A	A	
Westbound Thru	Major	Free	A	A	A	
Northbound Left	minor	Stop	A	B (11.0 sec.)	C (15.6 sec.)	
Northbound Right	minor	Stop				
Average Intersection Delay sec/veh			2.2 sec.	2.5 sec.	1.9 sec.	
Overall Intersection LOS			A	A	A	
SR 224 & Ruppert Rd		T intersection	Unsignalized	Unsignalized	Unsignalized	
Eastbound Left	Major	Yield	A	A	A	
Eastbound Thru	Major	Free	A	A	A	
Westbound Thru	Major	Free	A	A	A	
Westbound Right	Major		A	A	A	
Southbound Left	minor	Stop	B (10.0 sec.)	B (11.7 sec.)	C (17.2 sec.)	
Southbound Right	minor	Stop				
Average Intersection Delay sec/veh			1.8 sec.	2.1 sec.	1.8 sec.	
Overall Intersection LOS			A	A	A	

TDA Inc. 31-July-07

TABLE 2-5

Day of week: Saturday

Scenario: 2025, 5X HIGH SEASON WEEKEND DAY

Party size: 2 persons

Time: 3-4 PM

DEVELOPMENT			
Wineries with lodging	20	Lodging units per winery =	5
Wineries without lodging	20		
Lodging at Village	20	rooms (keys)	
Tasting rooms	40		
Village Restaurants	2		
Village Sales Points	2		

GUEST PARTIES			
Total parties for day =	5,486	Ref. 3, page 2, line 68	
Lodging units on site =	120		
Lodging occupancy =	80%		
Lodging on site =	96	parties	

TRIPS BY POPULATION GROUP					No. of Parties	Trip Orientation		3-4 PM Outbound Trips			3-4 PM Inbound Trips		
						East	West	Percent	East	West	Percent	East	West
Puget Sound Parties @			80%	of Total =	4,389								
	Day visitors @		10%	of Puget Snd Parties =	439	20%	80%	20%	18	70	10%	9	35
	Overnight @		90%	of Puget Snd Parties =	3,950				-	-	10%	-	-
		On-site @	80%	of lodging on site =	77	0%	0%	20%	-	-	10%	-	-
		Benton City @	10%	of lodging off-site=	387	0%	100%	20%	-	77	10%	-	39
		Tri-Cities	90%	of lodging off-site=	3,486	100%	0%	20%	697	-	10%	349	-
									-	-	10%	-	-
Non-Puget Sound Parties @			20%	of Total =	1,097				-	-	10%	-	-
	Day visitors @		50%	of non-Puget Snd Parties	549	80%	20%	20%	88	22	10%	44	11
	Overnight @		50%	of non-Puget Snd Parties	549				-	-	10%	-	-
		On-site @	20%	of lodging on site =	19	0%	0%	20%	-	-	10%	-	-
		Benton City @	10%	of lodging off-site=	53	0%	100%	20%	-	11	10%	-	5
		Tri-Cities	90%	of lodging off-site=	476	100%	0%	20%	95	-	10%	48	-
EMPLOYEES			Each	Number of Units	Total								
	Tasting Rooms @		5	40	200								
	Sales Points		5	2	10								
	Restaurants @		6	2	12								
	Village @		5	1	5								
		total			227	10%	90%	25%	6	51	10%	2	20
								total	903	231		451	111

Figure 2-8
 2025 Total Volumes w/ Project
 5X High Season Weekend
 With AVA Development
 Mid Afternoon Peak Hour
 Red Mountain AVA

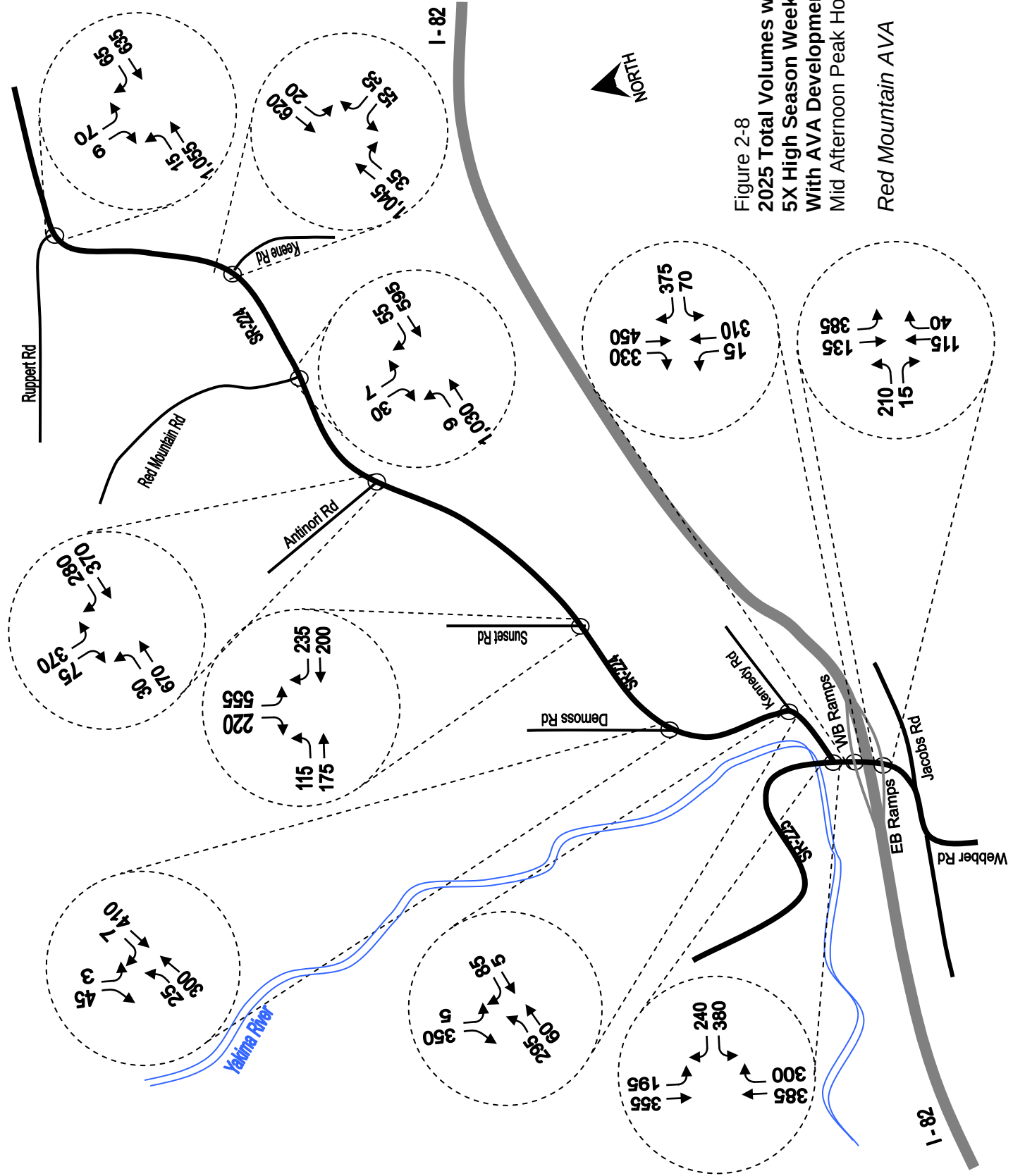


Table 2-6
5X High Season Weekend Day, Mid Afternoon Peak Hour
Intersection Level of Service (seconds of delay)
Red Mountain AVA - Washington

				High Season Weekend Day			Peak Event Weekend	
Intersection and Critical Movements	Approach Priority	Approach Control	2007 Existing Mid Afternoon Peak Hour	2025 Mid Afternoon Pk Hr Background Only	2025 Mid Afternoon Pk Hr w/ Project at Buildout	2025 Mid Afternoon Pk Hr Total w/ Mitigation	2025 Mid Afternoon Pk Hr w/ Peak Event	2025 Mid Afternoon Pk Hr Peak Event w/ Mitigation
I-82 EB Off Ramp & Webber Rd			Unsignalized	Unsignalized	Unsignalized	Signalized	Signalized	
Eastbound Left	minor	Stop	C (18.2 sec.)	F	F	C (22.8 sec.)	C (24.3 sec.)	
Eastbound Right	minor	Stop	A	A	A	A	A	
Northbound Thru	Major	Free						
Northbound Right	Major		A	A	A	A	A	
Southbound Left	Major	Free	A	A	A	A	B (12.8 sec.)	
Southbound Thru	Major							
Average Intersection Delay sec/veh			6.7 sec.	19.1 sec.	37.8 sec.	10.7 sec.	13.7 sec.	
Overall Intersection LOS			A	A	A	B	B	
I-82 WB Off Ramp & Webber Rd			Unsignalized	Unsignalized	Unsignalized		Unsignalized	
Westbound Left	minor	Stop	B (12.9 sec.)	C (21.6 sec.)	D (25.2 sec.)		D (32.2 sec.)	
Westbound Right	minor	Stop	B (10.3 sec.)	B (13.8 sec.)	B (14.9 sec.)		C (16.9 sec.)	
Northbound Left	Major							
Northbound Thru	Major	Free	A	A	A		A	
Southbound Thru	Major	Free	A	A	A		A	
Southbound Right	Major							
Average Intersection Delay sec/veh			3.8 sec.	5.4 sec.	5.6 sec.		5.6 sec.	
Overall Intersection LOS			A	B	C		D (32.2 sec.)	
SR 224 & SR 225		T intersection	Unsignalized	Unsignalized	Unsignalized	Roundabout	Roundabout	
Westbound Left	minor	Stop	C (23.3 sec.)	F	F	Single-Lane Roundabout: Intersection Capacity Utilization	Single-Lane Roundabout: Intersection Capacity Utilization	
Westbound Right	minor	Stop	B (10.8 sec.)	C (16.3 sec.)	C (17.2 sec.)			
Northbound Thru	Major	Free	A	A	A			
Northbound Right	Major							
Southbound Left	Major	Free	A	A	A			
Southbound Thru	Major							
Average Intersection Delay sec/veh			5.8 sec.	33.1 sec.	101.2 sec.	55.2%	99.1%	
Overall Intersection LOS			A	D	E	B	F	
SR 224 & Kennedy Rd		Wye intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	
East to North Left	Major	Free						
Eastbound Right	Major	Free	A	A	A		A	
South to West Thru	Major	Free	A	A	A		A	
South to East Left	Major	Yield						
East to North Right	minor	Stop	A	B (10.2 sec.)	B (10.6 sec.)		B (11.4 sec.)	
East to West Thru	minor	Stop						
Average Intersection Delay sec/veh			2.0 sec.	2.1 sec.	1.7 sec.		1.4 sec.	
Overall Intersection LOS			A	A	A		A	
SR 224 & Demoss Rd		Wye intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	
Eastbound Left	Major	Yield						
Eastbound Thru	Major	Free	A	B (10.1 sec.)	B (10.9 sec.)		B (12.8 sec.)	
Westbound Thru	Major	Free	A	A	A		A	
Westbound Right	Major		A	A	A		A	
Southbound Left	minor	Stop	B (11.2 sec.)	B (13.8 sec.)	C (18.8 sec.)		D (31.9 sec.)	
Southbound Right	minor	Stop						
Average Intersection Delay sec/veh			8.6 sec.	9.3 sec.	9.9 sec.		11.4 sec.	
Overall Intersection LOS			A	A	A		A	

Table 2-6
5X High Season Weekend Day, Mid Afternoon Peak Hour
Intersection Level of Service (seconds of delay)
Red Mountain AVA - Washington

				High Season Weekend Day			Peak Event Weekend	
Intersection and Critical Movements	Approach Priority	Approach Control	2007 Existing Mid Afternoon Peak Hour	2025 Mid Afternoon Pk Hr Background Only	2025 Mid Afternoon Pk Hr w/ Project at Buildout	2025 Mid Afternoon Pk Hr Total w/ Mitigation	2025 Mid Afternoon Pk Hr w/ Peak Event	2025 Mid Afternoon Pk Hr Peak Event w/ Mitigation
SR 224 & Sunset Rd		T intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	Unsignalized
Eastbound Left	Major	Yield	A	A	A		A	A
Eastbound Thru	Major	Free	A	A	A		A	A
Westbound Thru	Major	Free	A	A	A		A	A
Westbound Right	Major							
Southbound Left	minor	Stop	A	A	C (16.5 sec.)		F	F
Southbound Right	minor	Stop						B (11.2 sec.)
Average Intersection Delay sec/veh			1.8 sec.	2.0 sec.	6.9 sec.		210.9 sec.	107.7 sec.
Overall Intersection LOS			A	A	A		D	C
SR 224 & Antinori Rd		T intersection	Unsignalized *	Unsignalized	Unsignalized		Unsignalized	Unsignalized
Eastbound Left	Major	Yield	A	A	A		A	A
Eastbound Thru	Major	Free	A	A	A		A	A
Westbound Thru	Major	Free	A	A	A		A	A
Westbound Right	Major		A	A	A		A	A
Southbound Left	minor	Stop	A	A	B (13.9 sec.)		F	F
Southbound Right	minor	Stop						B (11.5 sec.)
Average Intersection Delay sec/veh			1.1 sec.	1.2 sec.	1.2 sec.		141.5 sec.	108.0 sec.
Overall Intersection LOS			A	A	A		F	E
SR 224 & Red Mountain Rd		T intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	
Eastbound Left	Major	Yield	A	A	A		A	
Eastbound Thru	Major	Free	A	A	A		A	
Westbound Thru	Major	Free	A	A	A		A	
Westbound Right	Major		A	A	A		A	
Southbound Left	minor	Stop	A	A	B (11.0 sec.)		C (21.4 sec.)	
Southbound Right	minor	Stop						
Average Intersection Delay sec/veh			1.1 sec.	1.2 sec.	0.7 sec.		0.7 sec.	
Overall Intersection LOS			A	A	A		C	
SR 224 & Keene Rd		T intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	
Eastbound Thru	Major	Free	A	A	A		A	
Eastbound Right	Major		A	A	A		A	
Westbound Left	Major	Yield	A	A	A		B (11.1 sec.)	
Westbound Thru	Major	Free	A	A	A		A	
Northbound Left	minor	Stop	A	B (11.5 sec.)	C (16.8 sec.)		F	
Northbound Right	minor	Stop	A	A	B (11.0 sec.)		C (22.3 sec.)	
Average Intersection Delay sec/veh			2.2 sec.	2.4 sec.	1.8 sec.		7.1 sec.	
Overall Intersection LOS			A	A	A		C	
SR 224 & Ruppert Rd		T intersection	Unsignalized	Unsignalized	Unsignalized		Unsignalized	Unsignalized
Eastbound Left	Major	Yield	A	A	A		A	A
Eastbound Thru	Major	Free	A	A	A		A	A
Westbound Thru	Major	Free	A	A	A		A	A
Westbound Right	Major		A	A	A		A	A
Southbound Left	minor	Stop	B (10.0 sec.)	B (11.7 sec.)	C (17.2 sec.)		F	F
Southbound Right	minor	Stop						A
Average Intersection Delay sec/veh			1.8 sec.	2.1 sec.	1.8 sec.		8.2 sec.	7.5 sec.
Overall Intersection LOS			A	A	A		D	D

UTILITY INFRASTRUCTURE

Infrastructure feasibility analyses and preliminary concepts for water, wastewater, and fire suppression were developed in support of the Red Mountain Site Master Site Plan. This section summarizes the alternative analysis and presents preliminary cost opinions generated for each utility option.

Context: County Comprehensive Plan and the Washington State Growth Management Act

Generally (that is, unless certain specific conditions stated in law exist) the Washington State Growth Management Act (GMA) does not allow the extension of municipal infrastructure and service (e.g., water and sewer service) outside of a city's Urban Growth Area (UGA).

In general, cities are the units of local government most appropriate to provide urban governmental services. In general, it is not appropriate that urban governmental services be extended to or expanded in rural areas except in those limited circumstances shown to be necessary to protect basic public health and safety and the environment and when such services are financially supportable at rural densities and do not permit urban development (RCW 36.70A.110(4))

The Red Mountain AVA is approximately 4,600 acres in size with no part of it being within a city's corporate boundary or UGA. Figure 2-9 shows the AVA boundary and the GMA boundaries of the adjacent cities.

Approximately 3,600 acres of the AVA are zoned Agriculture in the Benton County Comprehensive Plan. The application of such zoning for long-term commercially productive agricultural land is required under GMA, and will be applied as well in the Red Mountain Master Site Plan. It is not anticipated that the 3, 600 acres of agriculturally zoned land, which is where the Red Mountain AVA vineyards are located, will be included with a city's UGA. Approximately 15 to 20 acres of the land that is currently designated GMA Agriculture in the County Comprehensive Plan will be changed to a Master Planned Resort designation in the Red Mountain Master Site Plan, to accommodate the proposed Wine Village (see Section 6, Zoning). It is possible to designate 15 to 20 acres for a land use other than agriculture when it can be found that the soils and micro-climate in a particular location are marginal or are not suitable for long term productive agriculture.

The remaining approximately 1, 030 acres of the AVA not designated as Agriculture are currently designated Rural Lands 5 Acre (one dwelling unit per five acres) in the County Comprehensive Plan. It is conceivable that in the future some or all of this rural acreage could be included within a city's UGA, contingent upon satisfying GMA provisions, including a rigorous demonstration by a city that a specific amount of the land is needed for inclusion within its UGA in order to accommodate a projected population growth, per the official growth projections from the Washington State Office of Financial Management.

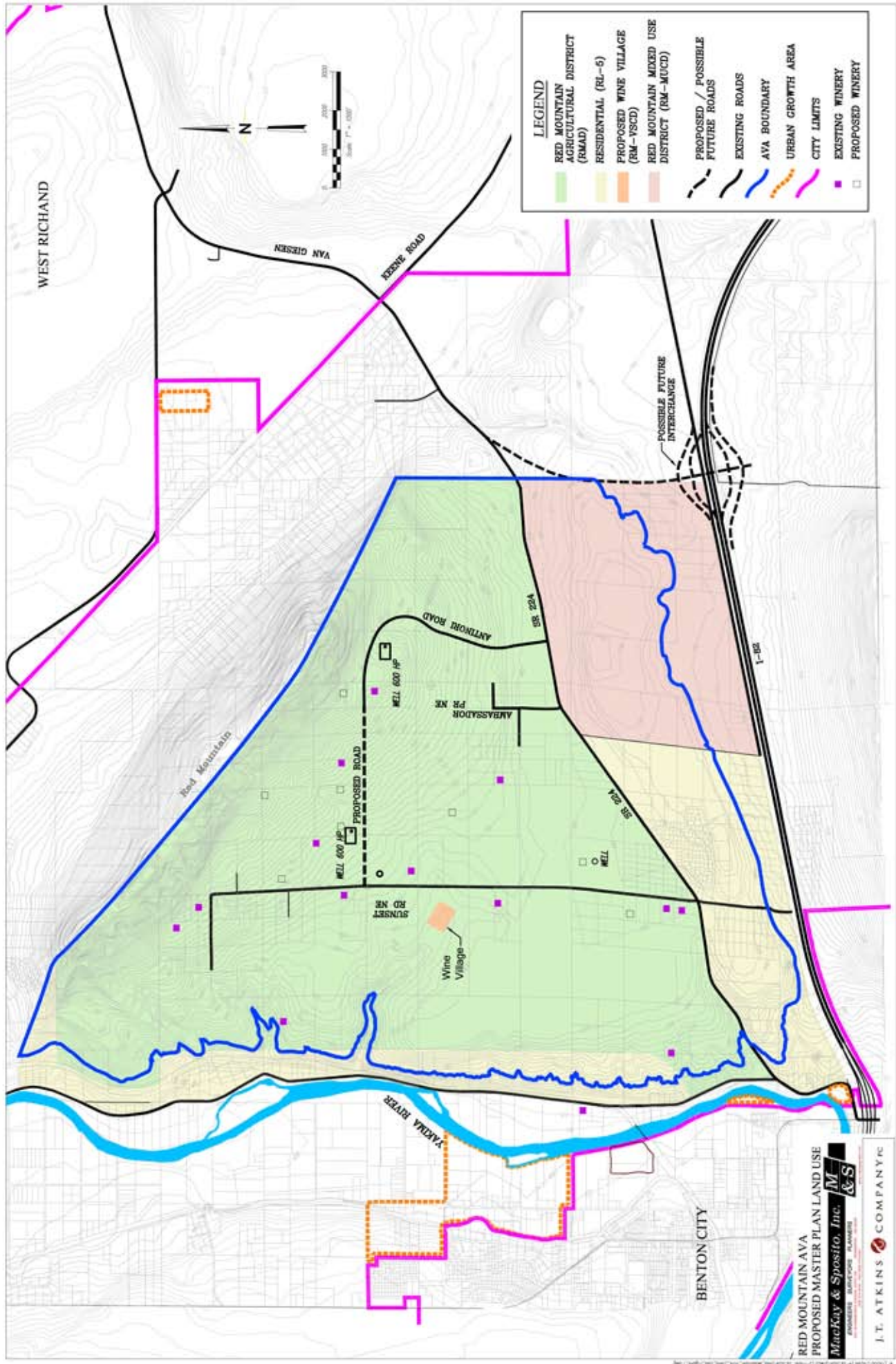


Figure 2-9. Land Use

Without disregard of the constraints imposed by GMA relative to the extension of municipal services outside of UGAs, the Red Mountain Master Site Plan proposes specific developments in all its land use designations (Agricultural, Wine Village Rural Lands Five and Visitor Serving) that will require solutions for domestic water, fire suppression, and wastewater disposal. As the Red Mountain AVA develops, additional wineries, tasting rooms, restaurants, boutique hotels, residences, and support service facilities will be constructed. These land uses all consume water and generate sanitary sewer wastewater in varying quantities.

There are three general options for utility service: municipal system, private regional system, and individual private on-site solutions. Any constructed water or sanitary sewer system must be built and maintained to Washington State Department of Ecology (WSDOE) and the Benton Franklin Health Department standards.

Municipal Utility Service to the Red Mountain AVA

There are options under GMA for provision of municipal utility service to the Red Mountain AVA from either West Richland or Benton City. Counties are permitted the extension of municipal infrastructure and services outside of UGAs if the service is for either a “Master Planned Resort” (36.70A.360 RCW) or a Major Industrial Development (36.70A.365 RCW).

A Master Planned Resort is defined as a self-contained and fully integrated planned unit development, in a setting of significant natural amenities, with primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor or outdoor recreational facilities. Per RCW 36.70A.360 (2) utilities and services, including those related to sewer, water, storm water, security, fire suppression, and emergency medical, may be provided to a Master Planned Resort by outside services providers, including municipalities and special purpose districts, provided that all costs associated with service extension and capacity increase directly attributable to the Master Planned Resort are fully borne by the resort, and provided that the service extension to the Master Planned Resort designation from the boundary of the city cannot serve land uses that lie outside of the City UGA and the Master Planned Resort. A Major Industrial Development can be a natural resources-based industry requiring a location near agricultural land, forest land or mineral resource land upon which it is dependent (36.70A365(1)(b)).

Because the GMA provisions for Master Planned Resort clearly do not apply to a circumstance where the agricultural use is the principal recreational activity of the Master Planned Resort (RCW 36.70A.360(4)(c)), Benton County staff has determined that Master Planned Resort designation is not appropriate for the entire AVA (that is, including the lands designated Agriculture). Therefore, assuming that it would be feasible economically and for other reasons to do so, as a matter of State planning law the individual wineries will not be able to connect to a municipal wastewater system through the use of a Master Planned Resort overlay. Additionally, the very low development density of the Agricultural designation of the AVA raises questions relative to the cost effectiveness of serving the Agricultural designation with municipal service.

Select areas of the AVA where higher density is proposed, such as the Wine Village and Visitor Serving Area, may, however, be eligible under GMA to become designated as a Master Planned

Resort. If these areas were successfully designated as such, the adjacent cities could provide utility service to these areas of the AVA. The proposed land use designations within the AVA are shown in Figure 2-9. The Tourist Serving Area is located at the southeast corner of the AVA between Interstate 82 and SR 224. This area should undergo further site planning to provide assurances that this area serves the tourism needs of the Red Mountain AVA and does not promote residential or commercial sprawl.

In preliminary discussions with the City of West Richland, staff indicated that there is domestic water availability and wastewater treatment plant capacity to serve the Tourist Serving and Wine Village properties, but that service to these areas would depend on future UGA decisions, which are determined in large measure by provisions within GMA. Staff indicated that under current water and sewer fee structures, it may not be feasible for the City to provide urban services to areas within the AVA even if the users paid the entire cost of extending services. Under the Master Planned Resort designation, the Wine Village and the 3,600 acres in the Agricultural designation are anticipated to remain in the unincorporated County for the foreseeable future. If the City of West Richland were to extend service to the Tourist Serving Area under the provisions of a Master Planned Resort, it would receive no retail sales tax from the service area. The value of sales tax revenue is built into the City fee structure; therefore, it might not be economically feasible for the City of West Richland to provide service to the Tourist Serving area without a revenue-sharing agreement with the County.⁹

Benton City's wastewater treatment system is close to the AVA as well, specifically to the Wine Village. The closest route for sanitary service would be across an abandoned train bridge over the Yakima River, and then across private property. Water service to the AVA from Benton City would either require a river crossing or long pipe run as well. It may be difficult to obtain easements across the old railroad bridge and private property. The City, however, is currently proceeding with permitting and grant acquisition to extend its water and sewer across the river on the SR 225 bridge at the Benton City interchange. As with the West Richland option for using the Master Planned Resort provisions to extend service outside of its UGA, Benton City's sales tax revenue is built into the City sanitary sewer fee structure. The City would not receive sales tax revenue from businesses located outside of the city limits without a revenue sharing agreement with the County. Benton City staff has indicated that the existing wastewater treatment plant has adequate capacity to serve the Wine Village.

Ultimately, the cities' decision to provide utility service areas within the AVA will depend on their urban growth boundaries and decisions by their respective city councils, the Benton County Planning Department, and Benton County Commissioners. The merits of municipal service to various land areas in the AVA are discussed further below.

Irrigation Water

Irrigation water is used throughout the AVA for vineyard irrigation. Currently, the source for this water is groundwater. A significant portion of the AVA is within the boundaries of the Kennewick Irrigation District (KID). KID has prepared an Irrigation Master Plan for Red Mountain AVA and has identified a water right that can be used as the irrigation source. This proposed irrigation system would obtain water from the Yakima River near the AVA and pump

raw irrigation water into and throughout the AVA. With the introduction of KID irrigation water to the AVA, fewer properties will depend on groundwater for irrigation. This could free up water right capacity currently used for irrigation to be used for other uses such as commercial, retail, and wine tasting rooms. This water right transfer option is discussed further in the following section. Figure 2-10 shows the proposed KID irrigation pipe distribution system.

Domestic Water

There are numerous current and proposed uses of domestic water within the AVA such as kitchens, restrooms, residential uses, winery process water, and other commercial uses. Each facility on Red Mountain has four options for obtaining domestic water: exempt wells, permitted wells, municipal services, and a regional private water purveyor.

Sources of Water

Exempt Wells

Currently, many of the existing properties on Red Mountain use exempt wells for domestic water, irrigation, and winery process water. Exempt wells are provided for in the state law; RCW 90.44.050 provides the limitations of exempt wells as follows:

There are four types of groundwater uses exempt from the state water-right permitting requirements:

- *Providing water for livestock (no gallon per day limit or acre restriction).*
- *Watering a non-commercial lawn or garden one-half acre in size or less (no gallon per day limit).*
- *Providing water for a single home or groups of homes (limited to 5,000 gallons per day (gpd)).*
- *Providing water for industrial purposes, including irrigation (limited to 5,000 gpd but no acre limit).*

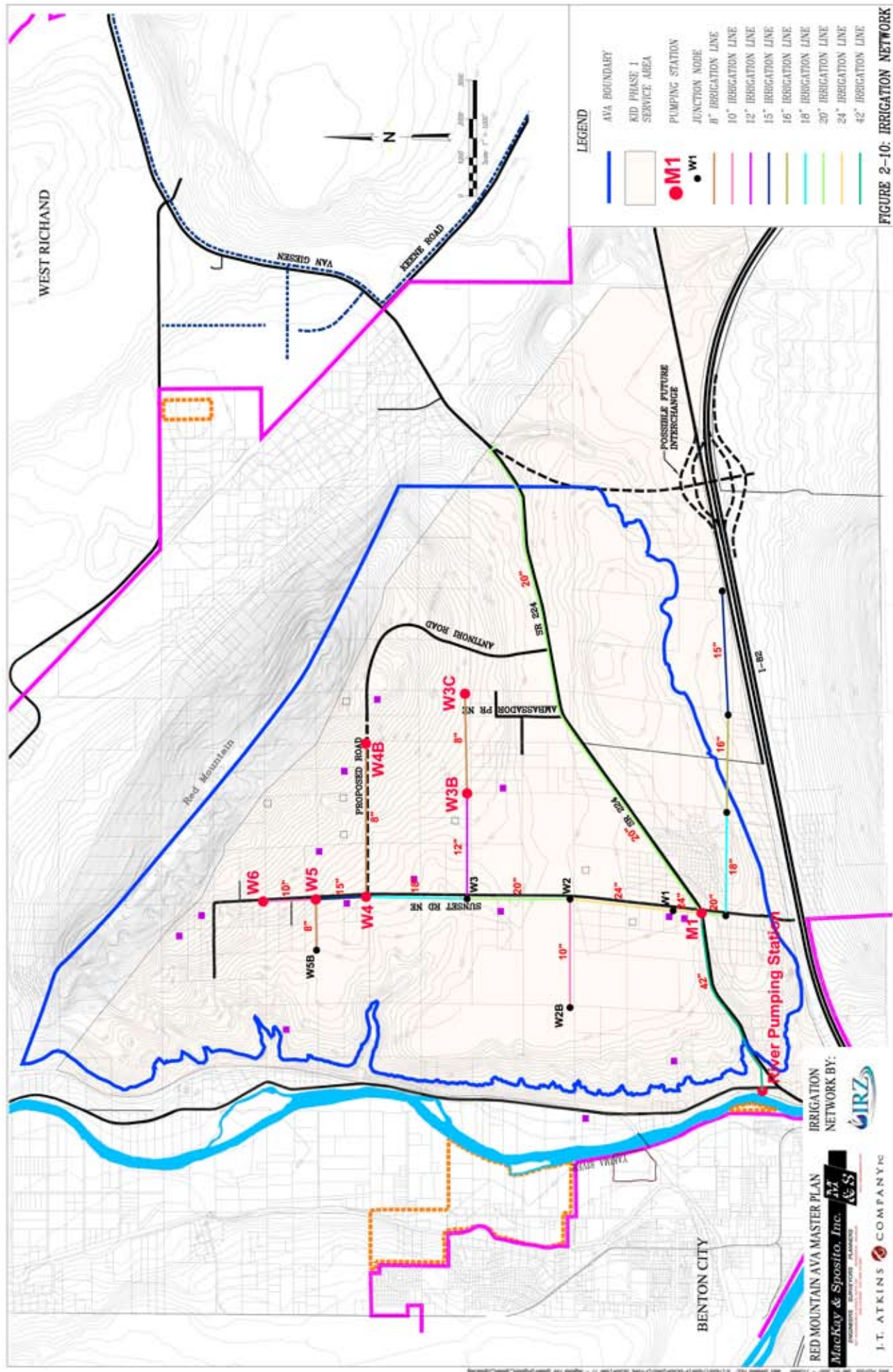


Figure 2-10. Irrigation Network

Under this exempt water right, up to 5,000 gpd can be used for vineyard irrigation and winery operations. Exempt well water could not be used for the commercial/ retail/ hotel uses proposed within the AVA.

For the foreseeable future, the residents, land owners, and business owners on Red Mountain will continue to rely on high-quality groundwater for domestic and other uses. It is recommended that all well owners install Reduced Pressure Backflow Assemblies (RPBA) on the well pump discharge piping to prevent any water or contamination from flowing backwards through the well and into the groundwater. The use of these simple devices will help protect groundwater quality.

Permitted Wells

Non-exempt ground water withdrawals require a water right permit or certificate. A new water right requires a water right application which will be reviewed per the following criteria:

- The water will be put to beneficial use
- There will be no impairment (harmful effects) to existing rights
- Water is available
- The water use will be in the public interest.

New water rights in the State of Washington are extremely difficult to obtain, and according to conversations with staff from the WSDOE's Water Resources Group, a new water right on Red Mountain will not be possible to secure at this time, or any time in the foreseeable future.¹⁰

Municipal Services

Because of GMA restrictions and the low-density of development within the AVA, municipal water supply is not likely to be a viable option for the general properties within the AVA. Through the use of the Master Planned Resort designation, the Wine Village property might be able to receive domestic water from either West Richland or Benton City. As previously stated, municipal service from either City would be unlikely without an agreement between the City and County to share retail sales tax.

A potential new interchange from Interstate 82 directly into the Red Mountain AVA area at Highway 224 is proposed to provide additional access to the City of West Richland. The interchange would also provide beneficial access to the Red Mountain AVA and surrounding communities. This interchange has been labeled the Interstate 82 Red Mountain Interchange. WSDOT is in the process of preparing an interchange justification report for the federal government concerning this proposed interchange. This report will analyze and evaluate the need for and feasibility of a new interchange on the federal interstate system. This possible future interchange would provide improved access to the Red Mountain AVA and also allow for faster response times for emergency services to areas south of the freeway and for the utility crews that service the Red Mountain area.

With the construction of the Red Mountain Interchange, a Tourist Serving Area could be considered for inclusion within the West Richland UGA. If the designated area were annexed, it

would be possible to extend city services into the area. Prior to annexation, dense development of the Tourist Serving Area is unlikely except through the use of the Master Planned Resort provisions of the GMA. If this did occur, it could generate additional traffic demand to hasten the justification for construction of the Interstate 82 Red Mountain interchange.

Regional Private Water System

Another option for domestic water service to properties within the AVA is a private water system. The most viable source for water supply to a private system serving the Wine Village is to change one or more of the existing perfected water rights within the AVA. With the introduction of KID water to the AVA, some of the existing well water rights might become available for a private water system. WSDOE might consider the following changes to an existing water right:

1. Place of use
2. Point of diversion or withdrawal
3. Additional point of diversion or withdrawal
4. Purpose of use
5. Season of use

There are several aspects of water rights that cannot be changed:

1. Instantaneous withdrawal rate or annual quantity
2. The status of the water right (perfected or unperfected)
3. Whether the water right is from a ground water or surface water right

Additionally, a water right that has not been perfected (a water permit) cannot be changed. Therefore, until a water right is perfected, the place of use or purpose of use cannot be changed. Only perfected water rights on Red Mountain will be available for potential sources of water for a private water system serving the Wine Village or other properties. The Washington State Department of Natural Resources (WSDNR) has several well water permits in the process of being perfected. If WSDNR receives irrigation water for its properties and is able to perfect their existing water permits, this water may be available for a private water system source. WSDNR has water permits for approximately 965 acre-feet (annual) and approximately 3,200 gpm maximum peak withdrawal. This is a substantial water permit that could be used to provide potable water to the Wine Village and Tourist Serving area. It is likely that only a fraction of this water right would be required for the potable water needs of these areas.

The development of a private water system would require Washington State Department of Health (WSDOH) approval and the drafting and approval of a Small Water System Management Program (SWSMP) or a full Water Plan. Such a water system would need to be built to WSDOH

standards, have water quality control measures, maintain a reliable supply, and provide adequate water for all ranges of demand.

Water Demands

Water demands and the ability to meet them vary by type of use within the AVA, as described below.

Wine Village

The Master Site Plan includes a Wine Village consisting of retail shops, a small hotel or hotels or inns (totaling 50 rooms), and restaurants. One possible location for the proposed Wine Village is on KID property, along Sunset Road. Potential sources of water for uses within the Wine Village are municipal, well, or regional water systems. The estimated average water demand for the Wine Village is 15,000 gpd (see Table 2-7). This is more than could be provided with an exempt well, but the water demand for the Wine Village could be provided through the change of use of one of the perfected water rights on Red Mountain.¹¹ With the introduction of KID water to the AVA, perfected water rights could be made available to change use from irrigation to commercial use. Certain aspects of perfected water rights could be changed so that these water rights could be used in the Wine Village for commercial / retail / residential use.

Table 2-7: Estimated average daily Wine Village water demand

Structure	Units	1,000 sq ft	Equivalent Residential Unit ERUs Per 1,000 sq ft	gpd
General store w/ hardware	1	4.5	0.3	338
Grocery/ deli	1	3.0	1.0	750
Retail / gift shop	2	3.0	0.3	450
Four star restaurant (per 10 seats)	5	3.0	1	1,250
Family restaurant (per 10 seats)	5	3.0	1	1,250
Coffee shop (per 10 seats)	1.6	3.0	1	400
Four star inn	20	12.0	0.6	3,000
Art gallery	1	3.0	0.3	225
Artisan studio	1	6.0	0.3	450
Bicycle rental	1	1.5	1.0	375
Residential condo	10	15.0	0.7	1,750
Interpretive center	1	3.0	0.3	225
Visitor restroom	400	1.0	0.025	2,500
Total (gpd)				12,963
Average Demand (gpm)				9.0
Peak Day Demand (gpm)				36

Additionally, an independent private water purveyor with perfected water rights and an approved water system could provide water to the Wine Village. For example, there is an existing private water purveyor, Harrison Water Company/Kiona, LLC, that provides domestic water to existing residential properties near SR 224.

The Wine Village is located approximately 2 miles from Benton City's water system and approximately 4 miles from West Richland's water system. Because of the low number of users and the cost of infrastructure construction (versus the cost of using perfected water rights), it is unlikely that municipal services will be extended to the Wine Village from either adjacent community.

Rural Lands Five Area

The Rural Lands Five (RL5) area is located between SR 224 and Interstate 82 in the Red Mountain Master Site Plan, and represents an area of more intense development than the rest of the Red Mountain AVA. The Rural Lands Five Acre zoning district for this designation allows a density of one dwelling per five acres and allows a wide range of uses, including: residential, agriculture, wineries under 3000 square feet, and with the approval of a conditional use permit: agricultural markets, wineries over 3000 sq. feet, ag related industries, reception facilities under 200 attendees, etc.

Further site planning in an area north of the proposed I-82 interchange in the Rural Lands Five area could contain a Tourist Serving Area to facilitate visitor facilities including commercial, indoor and outdoor recreation, vineyard and winery related industrial, overnight accommodations, residential, and other tourism related uses. A Tourist Serving designation in this area would also provide an important Red Mountain AVA "front door" area as a cohesive, coordinated development that reinforces the Red Mountain AVA vision. Depending upon the level of services required by the developments, municipal water and sewer services may be necessary. This area is closer to West Richland's infrastructure than to Benton City, but it could be served by either jurisdiction depending on future urban growth boundaries. With the construction of the proposed Red Mountain interchange, this area could be considered for annexation into West Richland and, thus, utility services would be provided by West Richland under this scenario.

This area will not likely develop to the higher density uses until it is annexed into one of the adjacent cities or unless it is developed as a Master Planned Resort under the County. A Master Planned Resort designation could allow for the extension of municipal services to the Tourist Serving Area prior to its inclusion within a UGA, whereupon all or a portion of it could be annexed to a city if a city's UGA were to expand in that direction consistent with the provisions of GMA.

Winery / Tasting Rooms

There are approximately 13 existing wineries in the Red Mountain AVA. These wineries use either exempt wells or permitted wells for their irrigation, processing, kitchen facilities, and associated uses. Estimated water demand for a 20,000 case/year winery is summarized in Tables 2-8 and 2-9. The estimated demand is broken into process water and potable water use.

Table 2-8: Estimated winery process water demand				
Month	Annual Water Use (%)	Average Monthly Water Use (gal)	Average Working Day Water Use (gpd)	Max Work Day Use (gpd)
January	7	16,660	641	1,282
February	7	16,660	641	1,282
March	5	11,900	458	915
April	2	4,760	183	366
May	2	4,760	183	366
June	2	4,760	183	366
July	2	4,760	183	366
August	7	16,660	641	1,282
September	15	35,700	1,373	2,746
October	18	42,840	1,648	3,295
November	18	42,840	1,648	3,295
December	15	35,700	1,373	2,746
Total	100	238,000		

Variables Used in the Calculation of Table 2-8	Amount	Unit
Total number of acres planted	85	Acres
Proposed yield	3.5	tons/acre
Wastewater per gal wine produced	5	gal/gal
Gallons of wine/ton of grapes	160	gal/ton
Cases of wine produced	20,021	Cases
Work days per month	26	Days/month
Work hours per work day	10	Hours/day
Max work day peak factor	2	

Table 2-9: Estimated peak month total winery potable water demand^a		
Use	Parameter	Daily Water Use (gpd)
Winery process water ^b	Peak day, Oct.	3,295
Tasting room /visitors ^c	200 visitors/day	1,200
Employees	8 full time	200
Total		4,695

^aPeak month water consumption for a 20,000 case/year winery
^bWinery process water peak month obtained from Table 2-8, month of October
^cPeak day, holiday weekend

With the introduction of KID irrigation water to the AVA, the vineyard and winery operators will not need to use their well water for crop irrigation. The exempt wells with limit of 5,000 gpd should be adequate to supply the operational water needs for most moderate sized vineyard or winery operations with access to KID water.

Since there are established, viable, low-cost solutions for winery potable water demands, a regional potable water system alternative was not investigated. If a group of property owners were interested in a potable water delivery system, the owners could combine resources and form a small water company to operate, maintain, and provide distribution of potable water. Analysis of such a system is beyond the scope of this study.

Residential

Residential demands within the AVA could be supplied from exempt wells, permitted wells, or a private water purveyor. With the low level of development within the agricultural area of the AVA, a municipal source is not necessary to supply the domestic water demand.

Residential demand is estimated at approximately 250 gpd average with a peak use of approximately 800 gpd (this excludes irrigation). This flow is well under the allowable 5,000 gpd limit for an exempt well for residential water use.

In the existing residential areas within the AVA, potable water is either obtained from wells or from a private water purveyor (Harrison Water Co. / Kiona, LLC). Since there are viable, low-cost, established solutions for residential potable water demands, a regional potable water system alternative was not investigated for the AVA.

Fire Suppression

In terms of protecting their investment, fire protection is a critical component for any property owner within the AVA. The wineries on Red Mountain represent a significant investment and typically these systems are protected by a fire suppression system. There is no regional high-volume water system for fire suppression within the AVA except for the Harrison Water Co. /Kiona, LLC system, which serves the existing residential communities within portions of the AVA near Highway 224. Each of the wineries on Red Mountain has installed private fire suppression systems consisting of tanks, water storage ponds, pumps, and distribution systems. These systems typically cost between \$150,000 and \$200,000 per winery. With individual costs this high, it is possible to realize savings with a regional system, and as such one of the greatest driving factors for a regional fire suppression system is the monetary benefit.

The AVA is served by two local fire districts, Benton Fire District #4 and Benton Fire District #2. Benton Fire District #2 services Benton City east to Sunset Road in the AVA. Fire District #4 services West Richland west to Sunset Road. Another rationale for a regional fire suppression system is to provide a reliable, accessible, and standardized system to which these fire districts could connect as a means to effectively fight fires on Red Mountain. The existing individual fire suppression systems do not provide firefighting capabilities to Red Mountain as a whole, and as such the fire districts could provide better fire suppression service to Red Mountain if a regional system were in place.

To analyze a potential regional fire suppression system, a subcommittee was formed to review the system parameters, water sources, flow criteria, and other system features. Based on input from the Benton Fire District #4, WSDNR, KID, and comments from the AVA Master Site Plan Advisory Team, three regional fire suppression alternatives were analyzed. All alternatives assume a piped distribution fire suppression system installed parallel to the proposed KID pipe system with a new reservoir to supply water for the system. Water to fill the reservoir would likely be obtained from the KID irrigation system during the irrigation season and required makeup water in the winter would be provided from WSDNR or some other permitted water source. Required makeup water would occur because of evaporation loss and reservoir use during a fire. KID water could be used for fire suppression water without further permitting or water right changes.

System alternatives included a range of fire suppression system capacities and service areas. All proposed system alternatives provide a minimum flow rate of 1,500 gallons per minute (gpm) and all alternatives provide coverage to the vineyard and winery areas of the AVA Master Site Plan. The following alternatives were evaluated:

- Alternative 1a: Coverage includes the agricultural area of the AVA Master Site Plan. Fire suppression flow of 1,500 gpm [adequate for wineries up to 11,000 – 30,000 sq-ft (sprinklered)]
- Alternative 1b: Coverage includes the agricultural area of the AVA Master Site Plan. Fire suppression flow of 3,000 gpm [adequate for wineries up to 11,000 – 30,000 sq-ft (without sprinklers) or larger wineries with sprinklers]
- Alternative 2: Fire suppression flow of 3,000 gpm to each winery and delivers 3,000 gpm to the Tourist Serving Area

The International Fire Code was used as the design basis for the fire system alternatives. The fire districts recommend that fire suppression systems be designed and built to the International Fire Code. As a result, for the analysis it was assumed that only one winery fire would occur at once. The details of each alternative follow.

Alternative 1a

Alternative 1a includes the construction of a 300,000-gallon open reservoir, segments of 12-inch-diameter water pipes, and a distribution network of 8-inch-diameter pipes. This pipe network can provide 1,500 gpm for 3 hours. Based on the International Fire Code, this flow is adequate for an 11,000 sq-ft Type 5B building with sprinklers or up to a 30,000 sq-ft Type IV or Type 5A building with sprinklers. This alternative provides adequate fire hydrant flow as well as adequate flow to buildings without fire sprinklers. This is the minimum recommended system for providing fire suppression coverage to the AVA (see Figure 2-11).

Alternative 1b

Alternative 1b builds on Alternative 1a by doubling the size of the reservoir, adding 16-inch-diameter pipe to the system, and including more 12-inch-diameter water mains. This pipe

network can provide 3,000 gpm for 3 hours. Based on the International Fire Code, this flow is adequate for an 11,000 sq-ft Type 5B building without sprinklers or up to a 30,000 sq-ft Type IV or Type 5A building without sprinklers. Additionally, this flow allows for a 47,000 sq-ft Type 5B building with sprinklers or up to an 116,000 sq-ft Type IV or Type 5A building with sprinklers. This alternative provides additional fire hydrant flow for fighting wild fires and structure fires as well as adequate flow to buildings without fire sprinklers. This alternative may provide fire suppression for buildings larger than are proposed on Red Mountain; the property owners would need to decide what the typical structure size will be and therefore how much fire suppression flow is necessary. It may be determined that this alternative provides more fire suppression coverage than is required, and as such may not warrant the added expense (see Figure 2-12.)

Alternative 2

Alternative 2 builds on Alternative 1b by extending 12-inch-diameter water mains into the Tourist Serving Area. This system would provide 3,000 gpm for 3 hours to all areas of the Master Site Plan. The purpose of extending fire suppression to the Tourist Serving area would be to provide fire suppression to facilities in this area that may develop prior to the extension of municipal services from West Richland or Benton City. The AVA property owners and land owners within the Tourist Serving area would need to weigh the benefits (such as earlier development, reduced insurance premiums, and improved security) against the cost of extending fire suppression service to the area (approximately \$500,000) (see Figure 2-13).

Summary

Based on the analysis performed, a regional fire suppression solution is viable given broad participation by multiple winery owners. An additional feasibility study or survey should be undertaken to evaluate interest and potential participation for a regional solution. If interest is high, project funding through a local improvement district could be initiated.

Preliminary estimated costs for each alternative are summarized in Table 2-10.

Table 2-10: Preliminary cost opinions, fire suppression system							
Alternative	Option Description	Estimated Construction Cost (\$)	Construction Contingency (10%) (\$)	Engineering and Administration (20%) (\$)	Right-of-Way Acquisition (5%) (\$)	Total Estimated Cost (\$)	Cost per Winery^a (\$)
1a	8" Fire system, delivery, 1,000 gpm	1,938,533	193,853	387,707	96,927	2,617,020	65,425

Table 2-10: Preliminary cost opinions, fire suppression system

Alternative	Option Description	Estimated Construction Cost (\$)	Construction Contingency (10%) (\$)	Engineering and Administration (20%) (\$)	Right-of-Way Acquisition (5%) (\$)	Total Estimated Cost (\$)	Cost per Winery^a (\$)
Ib	8" / 12" Fire system, 1,500 gpm	2,341,339	234,134	468,268	117,067	3,160,808	79,020
Ic	12" / 16" Fire system, 3,000 gpm	3,180,183	318,018	636,037	159,009	4,293,247	107,331
2 ^b	12" / 16" Fire system, 3,000 gpm + service to Tourist Service Area	3,497,477	349,748	699,495	174,874	4,721,594	N/A

^aAssumes 100% Participation from the estimated 40 total future wineries within the AVA.

^bDoes not include cost to provide domestic water to the Tourist Serving area.

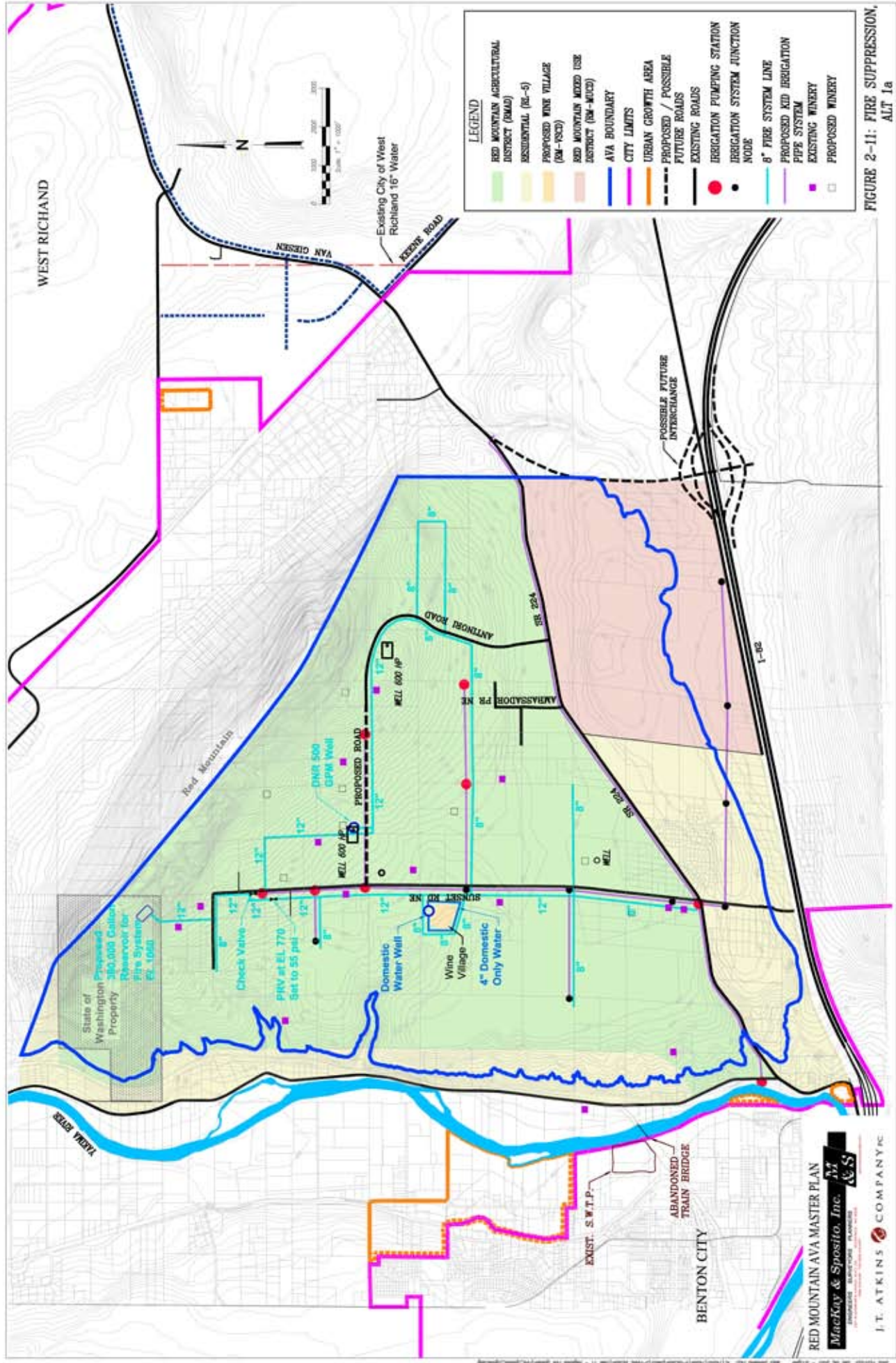


Figure 2-1 I. Fire Suppression, Alt 1a

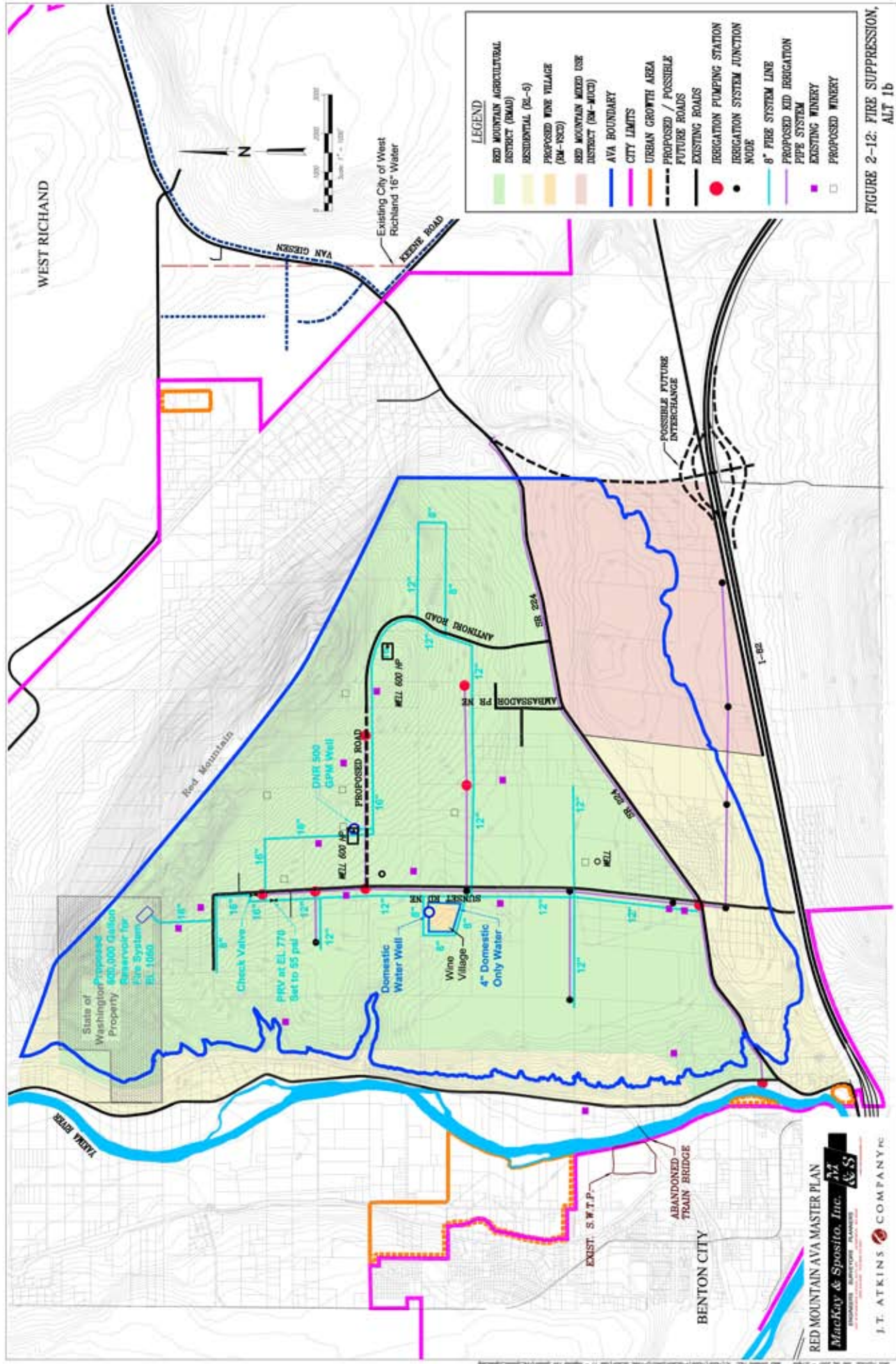


Figure 2-12. Fire Suppression, Alt 1b

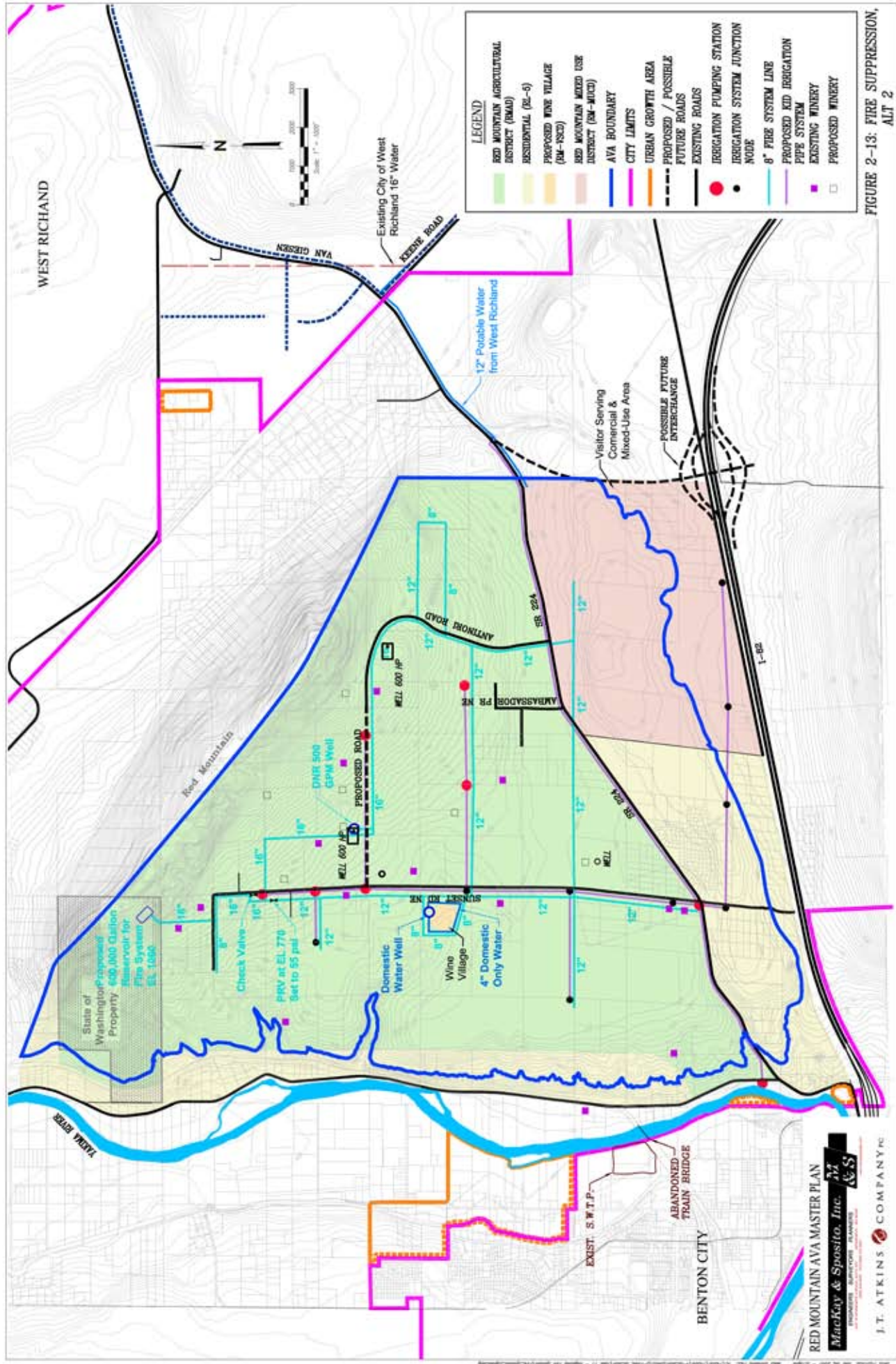


Figure 2-13. Fire Suppression, Alt 2

Sanitary Wastewater Collection Alternatives

There are two primary sources of sanitary sewer waste within the Red Mountain AVA, domestic waste and industrial waste.

Domestic Wastewater

Domestic waste is generated from the homes, tasting rooms, kitchen facilities, restaurants and overnight facilities. Domestic wastewater contains pathogens and thus some level of treatment is required before it can be released to the natural environment. In an urban setting, domestic waste is collected by a City or special service district municipal system and conveyed to a treatment plant where it is processed for disposal to a local water body. In rural settings, domestic wastewater is typically collected, routed to an on-site septic tank, and discharged on-site to a drainfield.

Process Wastewater

The other source of wastewater developed within the AVA is wine processing wastewater. Wine processing wastewater is considered industrial waste. Industrial wastewater typically does not contain pathogens.

Wineries generate several times as much wastewater as they produce wine, the ratio is estimated to be in the range of twice to ten times as much wastewater as wine. The strength of the wastewater ranges from a few hundred milligrams per liter (mg/L) of BOD (a measure of the organic content and the potential impact on water quality) to tens of thousands, with most [winery] wastewater in the range of one to ten thousand milligrams per liter. For comparison, the water in a stream is unlikely to meet the water quality criterion for dissolved oxygen if the BOD is much over 10 mg/L and domestic wastewater, before treatment, is typically 250 mg/L and in the range of 5 to 30 mg/L after successful treatment. Groundwater is even more sensitive to addition of oxygen consuming substances, since there are no photosynthetic organisms to replace oxygen and exchange with the atmosphere is severely restricted.¹²

Because of the high concentration of organic matter in industrial wastewater from wine production, discharge of industrial wastes to a municipal system or to the ground requires a discharge permit. With proper pre-treatment, industrial wastewater may be land applied, discharged to a municipal system, or stored in lagoons or tanks and re-used as supplemental irrigation water. These alternatives are evaluated below.

The process of converting grapes to wine creates sanitary wastewater during several steps of the process. The sources of wastewater during wine production are as follows:

- Significant sources of wastewater in wine production
- Machinery washing

- Floor washing
- Must production process (Must is the pulp of grape skins used to make red wine; the must production process involves the harvesting the grapes and releasing the juice from the individual fruits into the tanks)
- Barrel or tank pre-washing prior to the fermentation process
- Cleaning of tanks or barrels after the wine has been removed
- Other sources of wastewater during wine production
- Fermentation process
- Fermentation vessels post-washing
- Storage tanks pre-washing
- Washing of transportation pumps
- Storage tanks post-washing

Wastewater production from winery processes is typically expressed as a function of the product produced; gallons of wastewater per case of wine produced is a good matrix to use. Wastewater production from wineries varies tremendously based on several factors including scale of operation, scarcity of water, commitment to water conservation, special winery equipment, methods of swelling and rinsing new barrels for cellar use, use of dry methods for cleaning (vacuum, compressed air, etc)¹³, and the extent to which lees filtration is used. The primary determinate of wastewater production is the scale of the operation. Table 2-11 summarizes the typical range of winery process wastewater production.

Table 2-11: Estimated range of process wastewater production per case of 12 - 750ml bottles			
Production Capacity (cases/year)	Water Use Per Case of Wine (gal/case)	Process Wastewater Production (gal/case)	Process Wastewater (gal/gal)^a
> 1,000,000	10-14	8 - 10	3.4 – 4.2
200,000 – 1,000,000	14-16	12 - 14	5.0 – 5.9
50,000 – 200,000	16-18	14 - 18	5.9 – 7.6
< 50,000	18-25	16 - 23	6.7 – 9.7
^a One case of wine is 12-750 ml bottles or 2.38 gallons.			

Sanitary Wastewater Disposal Alternatives

Several alternatives exist for providing sanitary sewer service to the AVA for both the domestic and industrial wastewater streams. This section summarizes the alternative analysis performed for each wastewater stream.

Municipal Wastewater System

See *County Growth Management Area (GMA) Issues* at the beginning of this section for a discussion of how GMA applies to the extension of municipal infrastructure and service.

Ultimately, the cities' decision to serve select areas within the AVA (Wine Village and Tourist Serving area) will depend on the considerations and decisions that land owners, Benton County and the Cities make regarding: the degree to which they want to facilitate the natural pace of build-out of the Red Mountain Master Site Plan; the options available to them for cost effective development and service to those areas; and the consistency of the options with the provisions of state planning law. Extensions of UGAs under GMA are determined by the pace of population growth over time. In the shorter term, because extensions of UGAs and annexation may be problematic relative to the requirements of GMA, the use of the Master Planned Resort designation would allow for development via the extension of municipal services to the Tourist Serving area, and the Wine Village, if needed.

Domestic Wastewater

Provision of Washington State's GMA does not allow the extension of municipal services to areas outside of the designated UGAs of cities except for Master Planned Resorts and Industrial developments. No part of the AVA is currently within a designated urban growth area. The 3,600 acres of the AVA that are currently designated and zoned for commercial agriculture are unlikely to be included within an urban growth area for the foreseeable future. As the cities of Benton City and West Richland experience population growth into the future there are provisions and criteria within GMA that would enable those portions of the AVA not zoned for agriculture to be included in an urban growth area if the land is needed to accommodate population growth; currently additional lands are not needed. Consequently, a municipal service system is not a viable alternative for domestic wastewater collection.

Industrial Wastewater

Generally, because the Agricultural designation of the AVA will remain outside of a UGA or Master Planned Resort, the wineries within it will not be able to connect to a municipal sanitary sewer system for industrial wastewater collection. Additionally, municipal wastewater plants cannot receive such wastewater without it being first pre-treated. As discussed in *County Growth Management Area (GMA) Issues* at the beginning of this Infrastructure section, RCW 36.70A.365 (1)(b) raises a possibility that an industrial wastewater pre-treatment plant located within or outside the AVA could be designated as a Major Industrial Development under RCW 36.70A.365 and connected to a municipal wastewater plant. According to County planning staff, preliminary conversations with staff of the State office for GMA on this possibility were not discouraging.

Municipal System Alternatives

Several alternative configurations have been developed for municipal collection systems serving the Wine Village and future Tourist Serving area development. The alternatives include

infrastructure as required to connect to Benton City and West Richland's sanitary collection system. Table 2-12 summarizes the features and construction cost opinions for each of the alternatives. Each alternative are shown in Figures 2-14 through 2-18.

Table 2-12: Preliminary cost opinions, municipal sanitary collection system alternatives						
Alternative	Option Description	Estimated Construction Cost (\$)	Construction Contingency (10%) (\$)	Engineering and Administration (20%) (\$)	Right-of-Way Acquisition (5%) (\$)	Total Estimated Cost (\$)
1	Wine Village to Benton City WWTP (Gravity)	736,180	73,618	147,236	36,809	993,843
2	Wine Village to Benton City WWTP (Pressure)	602,168	60,217	120,434	30,108	812,927
3	Tourist Serving Area to West Richland WWTP	1,425,470	142,547	285,094	71,273	1,924,384
4	Tourist Serving Area and Wine Village to West Richland WWTP	1,696,090	169,609	339,218	84,804	2,289,721
5	Tourist Serving Area to Benton City and Tourist Serving Area to West Richland WWTPs ^a	2,161,650	216,165	432,330	108,082	2,918,227
^a This alternative is simply the combination of Alternative 1 and Alternative 3						

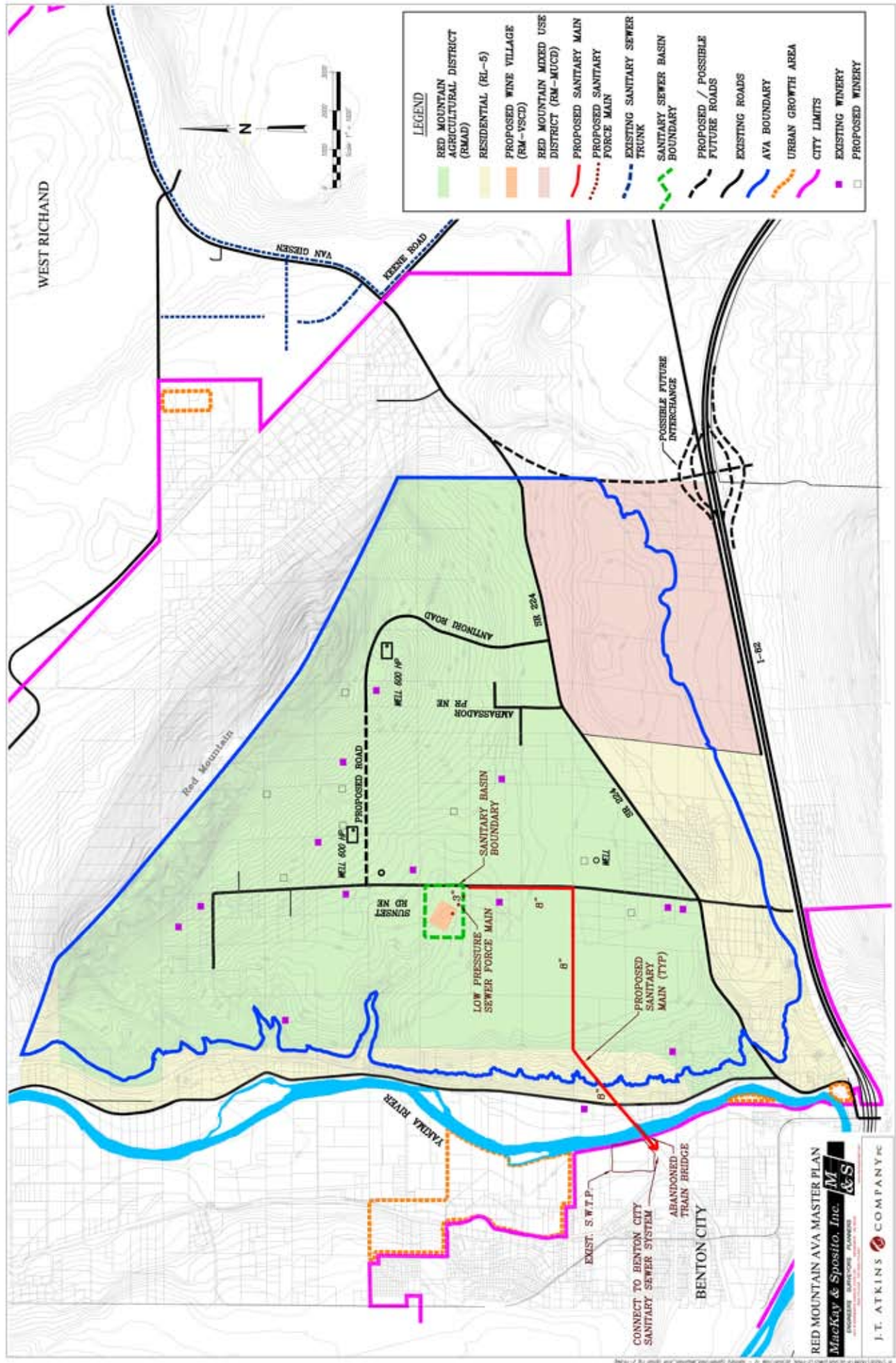


Figure 2-14. Municipal Collection System, Alt. I

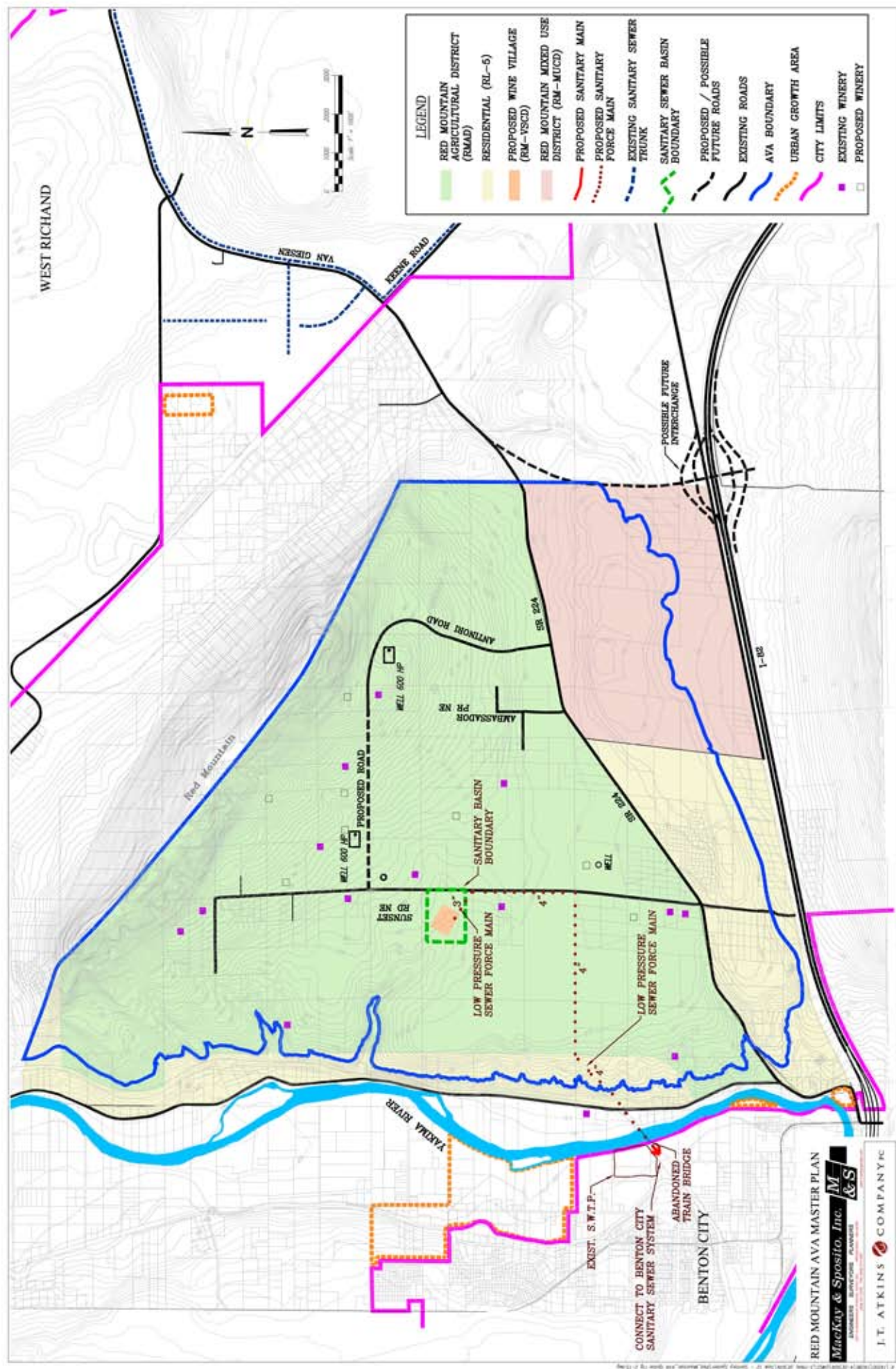


Figure 2-15. Municipal Collection System, Alt. 2

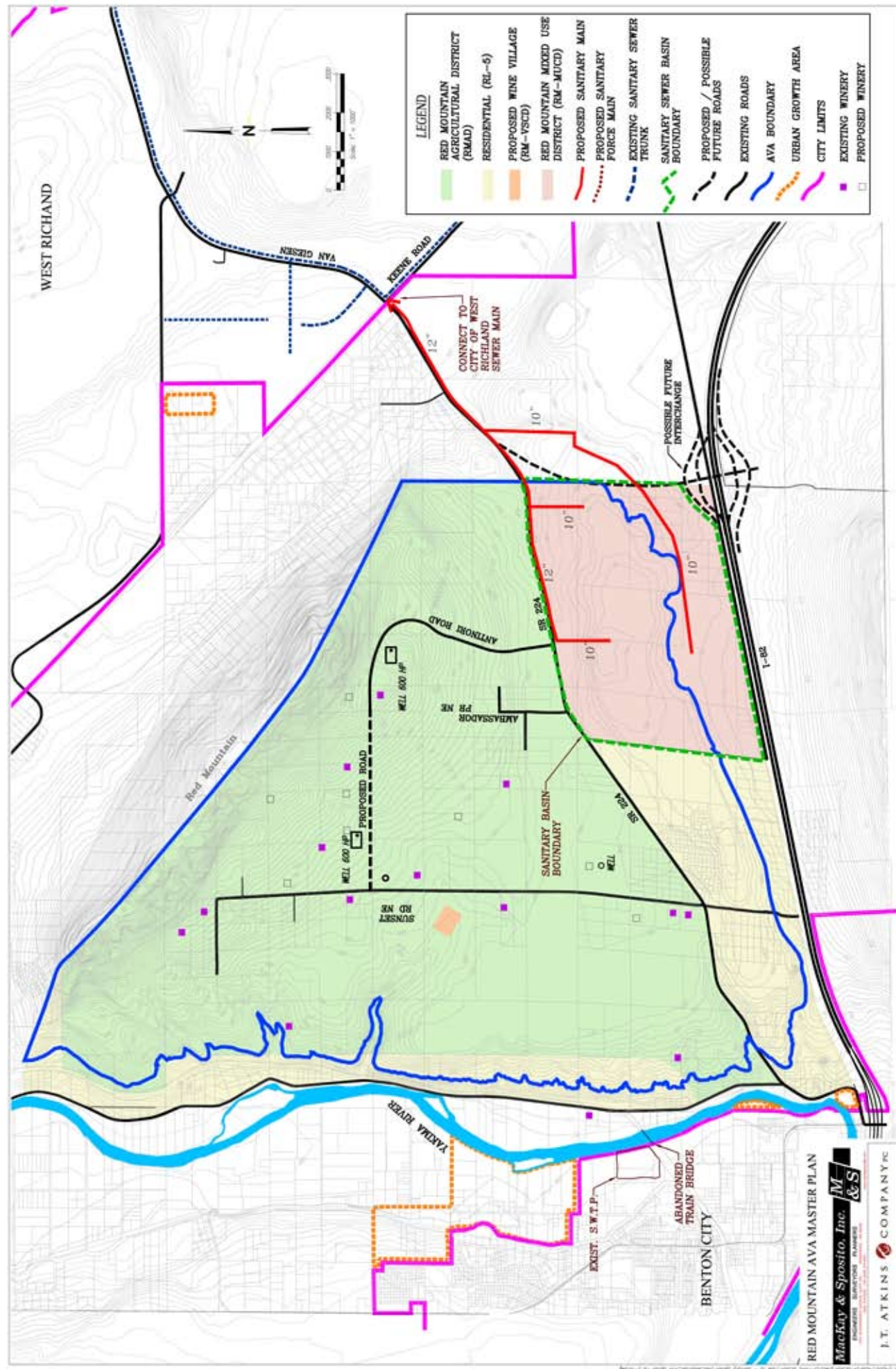


Figure 2-16. Municipal Collection System, Alt. 3

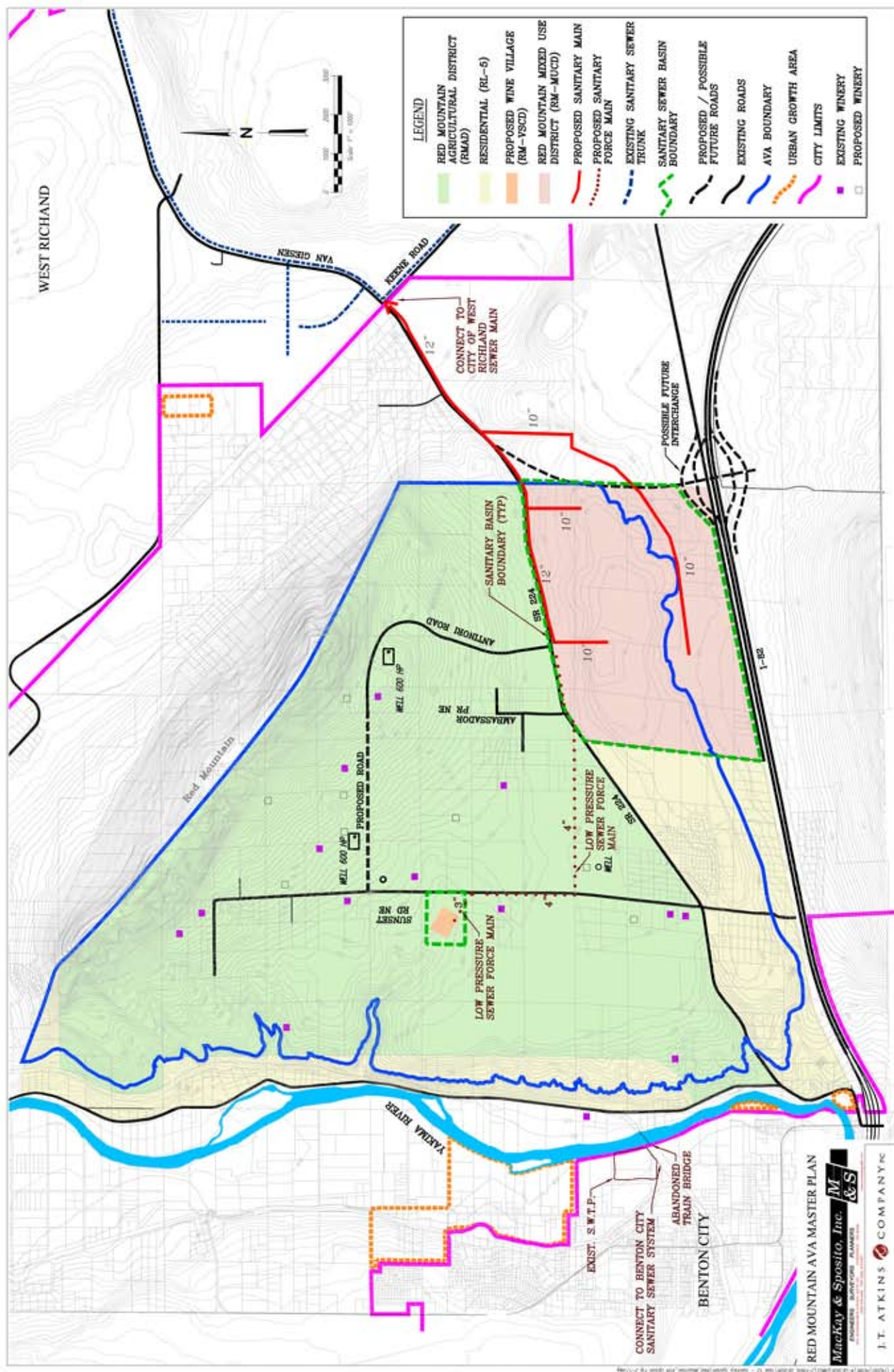


Figure 2-17. Municipal Collection System, Alt. 4

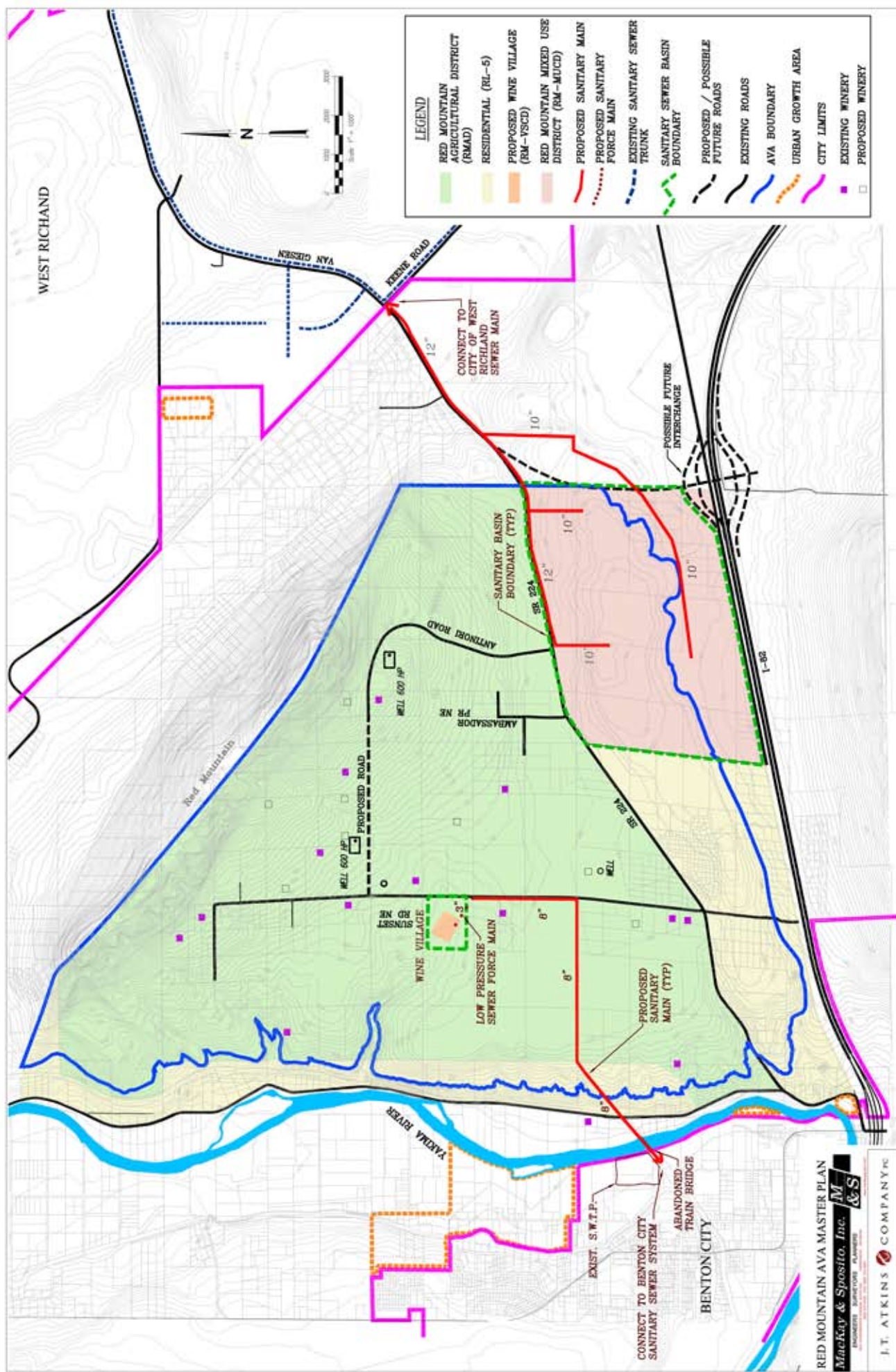


Figure 2-18. Municipal Collection System

Advantages and Disadvantages of Municipal System

The municipal system has the primary advantage of convenience. If a municipal sanitary sewer system were available within the AVA, the Wine Village and other densely developed areas could simply connect to the system eliminating the need to maintain an on-site wastewater disposal system. The municipal system would provide for disposal of domestic wastewater from the Wine Village, as long as the system did not extend outside of the designated Master Plan Resort and Tourist Serving area. Because of the size and level of development proposed for the mixed use area, it is likely that this area will not be able to develop without the availability of a municipal wastewater system, unless the water were first pre-treated.

A municipal system does have several disadvantages. Perhaps the greatest disadvantage is the system cost. The AVA may be considered small relative to other AVA's, however, the development level is sparse, and the sanitary system required to provide service to the Wine Village will be expensive. The only provision for a municipal sanitary system serving the Wine Village is the Master Planned Resort designation. Under this scenario the entire cost of infrastructure between the Wine Village and the municipal system must be borne by the Wine Village development. Additionally, winery process water from the individual wineries can not connect to the municipal system, so the municipal system does not provide a solution for disposal of the process wastewater.

Soil Treatment

Sanitary wastewater treatment through the soil matrix has been used for many years to successfully treat sanitary wastewater.

Domestic Wastewater

A properly sized, installed, and maintained system of septic tanks and drainfields can be used for effective treatment and disposal of domestic wastewater. With a proper loading rate (gallons of wastewater per square-foot of drainfield), the soil matrix will remain aerobic and treatment will continue with little or no maintenance. For the soil types typical in the Red Mountain AVA, approximately 2,000 sq-feet of property is required for every 450 gallons of domestic wastewater. There are areas within the AVA with shallow soil over rock—in these areas septic systems might not be permitted.

The Benton-Franklin Department of Health will review and permit properly designed and constructed domestic wastewater systems up to a capacity of 3,500 gpd. The local Health Department is not aware of any health problems or groundwater problems associated with the current use of septic tank and drainfields for domestic wastewater treatment and disposal. The Health Department will continue to approve future septic systems for the Red Mountain AVA area as long as the systems are properly sized for the local soil conditions.¹⁴ Kay Rotell, Environmental Health Specialist, Benton-Franklin Health District, March 28, 2007

The estimated daily wastewater volume from the Wine Village is approximately 12,000 gallons. An on-site disposal system could be designed for this magnitude of wastewater; a system of this

size would need to be reviewed and approved by the Department of Ecology. Because of the cost of extending municipal service to the Wine Village, an on-site disposal system for the Wine Village wastewater may be the only viable alternative for this source of wastewater.

Cost Opinion

The estimated costs for septic systems with a range of flows are summarized in Table 2-13. Septic systems serving commercial uses such as tasting rooms, commercial kitchens, and other public uses will need to have oil/water separators and generally will need to be a more robust system than the standard residential-type septic system and drainfield. One option for this type of system, called a recirculating gravel filter system, consists of multiple septic tanks, recirculating tank, effluent filters, flow splitter, and a gravel filter.

Table 2-13: Estimated septic system costs			
System Capacity (gpd)	Wastewater Source	System Type	Estimated Total Cost (Material and Labor) (\$)
800	Residential	Standard Gravity	3,000 - 5,000
1,250	Residential	Standard Gravity	3,500 - 5,500
1,600	Residential	Standard gravity	4,400 - 6,000
2,500	Tasting room/ Commercial kitchen	Recirculating gravel Filter and drain field	15,000 - 30,000
3,000	Tasting room/ Commercial kitchen	Recirculating gravel Filter and drain field	30,000 - 50,000

Industrial Wastewater

The wastewater from wineries is dominated by soluble organic compounds (sugars and ethyl alcohol); particulate solids are present at lower concentrations. Wineries generally use heat and non-halogen compounds for disinfection, so that troublesome (e.g., toxic or hazardous) chemicals are not expected to be present. Treatment of winery wastewater is thus a matter of achieving an adequate level of removal of simple organic compounds rather than treating difficult compounds. Treatment options range from application of the waste to land with treatment by ordinary soil processes through the various treatment technologies used to treat domestic wastewater and total evaporation. Wastewater from a winery has much higher ratio of organic carbon to nutrients, such as nitrogen and phosphorus, and usually a low pH (4 or less), which can require correction or adjustment in order to achieve successful treatment.

Disposal of industrial wastewater through the use of standard septic systems and drainfields typically results in failure of the drainfield due to excessive carryover of solids and soluble biological oxygen demand (BOD) into the drainfield. With proper pre-filtering of lees and proper sizing of septic tanks for adequate retention time, septic tanks can function as anaerobic treatment chambers. Individual winery process water alternatives are evaluated in the following section.

Package Wastewater Treatment Facility

Package wastewater treatment plants are available from various manufacturers. These facilities range in treatment capacity from 15,000 gpd to 200,000 gpd and larger. Package treatment plants can produce a very clean effluent when used to treat a consistent wastewater inflow. Residential and commercial wastewaters are good candidates for package plant treatment. A small package treatment plant could be used to treat the wastewater production from the Wine Village or Tourist Serving areas. Because of the variation in flow, high BOD concentrations, low pH, limited nitrogen and phosphorous and other wastewater variations, these facilities may not be suitable to treat winery wastewater. The estimated cost for 15,000-gpd facility treating domestic and commercial wastewater is approximately \$500,000 and the estimated cost for a 125,000-gpd facility is approximately \$1,100,000. Any of the package plants could be used in any of the land use designations (Agricultural District, Wine Village, or Tourist Serving area) proposed in this Master Site Plan.

On-site (within the AVA) Industrial Wastewater Disposal

Operational Practices and Effect on Wastewater

Wastewater is generated primarily from the following stages of the wine production process:

1. Washing the grape crushing / de-stemmer machine and pad during harvest
2. Tank rinsing after fermentation
3. Rinsing the holding tank after wine is transferred to barrels
4. Washing barrels
5. Floor washing in bottling area

Through winery operational practices and use of various filters, winery operators can dramatically alter the volume and concentration of organic matter in process wastewater.

Several practices that can be implemented to minimize organics and solids in the wastewater are summarized as follows:

- Installing a catch basin or trench drain with a removable screen at the crush pad to collect wash-downed solids from the crusher and de-stemmer equipment.
- Drawing wine from the bottom of the fermenting tanks through a centrifugal filter to extract wine and separate lees. The lees can then be routed through a lees filter to extract more wine and dry the lees for disposal in a compost area. This process prevents the lees/wine slurry from entering the wastewater stream. Lees filters can be rotary vacuum filters, plate and frame filters, sand media filters, or diatomaceous earth filters.



ASSO Spadoni Rotary Vacuum Filter



Alfa Magic Plate and Frame Filter

- Cleaning tank walls by hand with a squeegee, collecting solids into tubs for disposal in vineyard, compost, or hauled off-site. If the solids are applied to the land, there should be no free liquid or readily dissolved sugars. Once this is completed, the tank can be rinsed into the sanitary system.
- Floor washing can be routed into floor drains with removable screens for final collection of any solids that may have fallen on the floor.

Procedures like this can reduce the winery process water volume and halve the biological oxygen demand (BOD) concentration of the wastewater (from approximately 7,000 mg/liter to approximately 3,500 mg/liter). Procedures like this can dramatically improve the performance of an individual wastewater treatment system.

Some vintners prefer not to filter their wines for risk of removing tannin, flavors, and aging potential. This is not counter to producing a lower BOD wastewater; the winery operation simply must be configured in such a manner to filter lees slurry and other wastewater prior to discharging to the wastewater system.

Individual Winery Solutions

Treatment of process wastewater could be accomplished through several alternatives with variations on each alternative. The selection of a wastewater treatment system ultimately will depend on winery practices, wastewater constituents, site configuration, preference and other variables. One of the critical variables in wastewater treatment alternatives is BOD concentration of the wastewater. BOD concentration of winery wastewater is a function of operational practices, conservation practices, wastewater filtering, and other factors.

Two overall wastewater alternatives exist for treatment. The first alternative is on-site treatment at each winery. Several alternatives exist for individual on-site winery treatment alternatives. Four such alternatives were evaluated for this report: on-site irrigation lagoon, on-site evaporation lagoon, anaerobic treatment with solids settling and land application, and aerated primary

treatment with clarifiers. Schematic figures of each of these alternatives are shown in Figures 2-19, 2-20, 2-22, and 2-23.

Evaporation Lagoon

One of the options is for each winery to have an independent on-site evaporation lagoon. Each winery would construct and maintain an on-site evaporation lagoon to store and evaporate the entire annual process water volume. The evaporation lagoon would be designed to receive only winery process wastewater and so that the pond was dry at the beginning of the crush season each year. These lagoons would vary in size depending on winery scale. A winery producing approximately 20,000 cases/year could expect to construct an evaporation pond with an area of approximately 30,000 square-feet. This pond would have a double liner with leak detection between the layers. Figure 2-19 shows the basic components of this alternative. The features of this alternative include pre-screening to remove lees and other bulk solids that could lead to significant algae growth and other odorous buildup in the lagoon and the use of aerators to provide oxygen to the liquid for biological treatment. The evaporation lagoon would have a double liner and would completely evaporate the wastewater each summer prior to the fall crush. This pond could be planted with perimeter landscaping, but it would not likely be an attractive property feature and it has the potential to generate unpleasant odors.

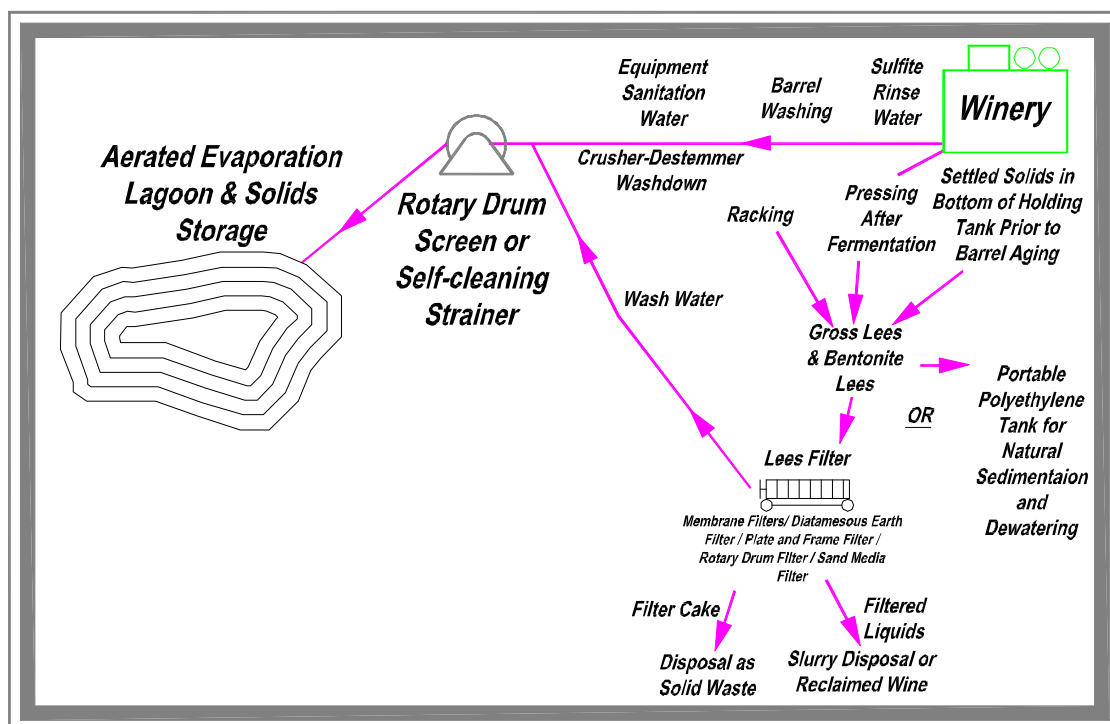


Figure 2-19: Individual Evaporation Lagoon

Irrigation Lagoon

Another option is for a winery to have an independent on-site irrigation lagoon. A winery would construct and maintain an on-site irrigation lagoon to store process wastewater during the winter. After initial filtering to remove lees and other BOD from the wastewater stream, the wastewater would be discharged to a lined storage and treatment lagoon. Water from the lagoon would be blended with irrigation water during the irrigation season and applied to the vineyard. The use of the wastewater for irrigation may require an efficient removal of BOD depending upon the vulnerability of the irrigation system to clogging from organic matter. The depth of water in such a lagoon would vary between 4 feet in the middle of the summer to 8 feet in the winter. An irrigation pond such as this would collect and store rain water during the winter and experience wastewater evaporation in the summer months.

A winery producing approximately 20,000 cases / year could expect to construct an irrigation pond with an area of about 15,000 square-feet and a volume of 300,000 gallons. This pond would be a double lined pond with leak detection between the layers. Figure 2-20 shows the basic components of this alternative. A winery owner could choose how much wastewater to blend with irrigation water. The Department of Ecology recommends that a maximum of 10 pounds of BOD per acre per week be applied to the vineyard. This mass of BOD applied to the vineyard could be determined by measuring the BOD concentration of the wastewater in the lagoon and measuring how much wastewater from the lagoon is being mixed with irrigation water. The wastewater volume produced is a small fraction of the irrigation water requirement, thus, there is adequate irrigation volume with which to blend the wastewater to achieve the maximum BOD loading.

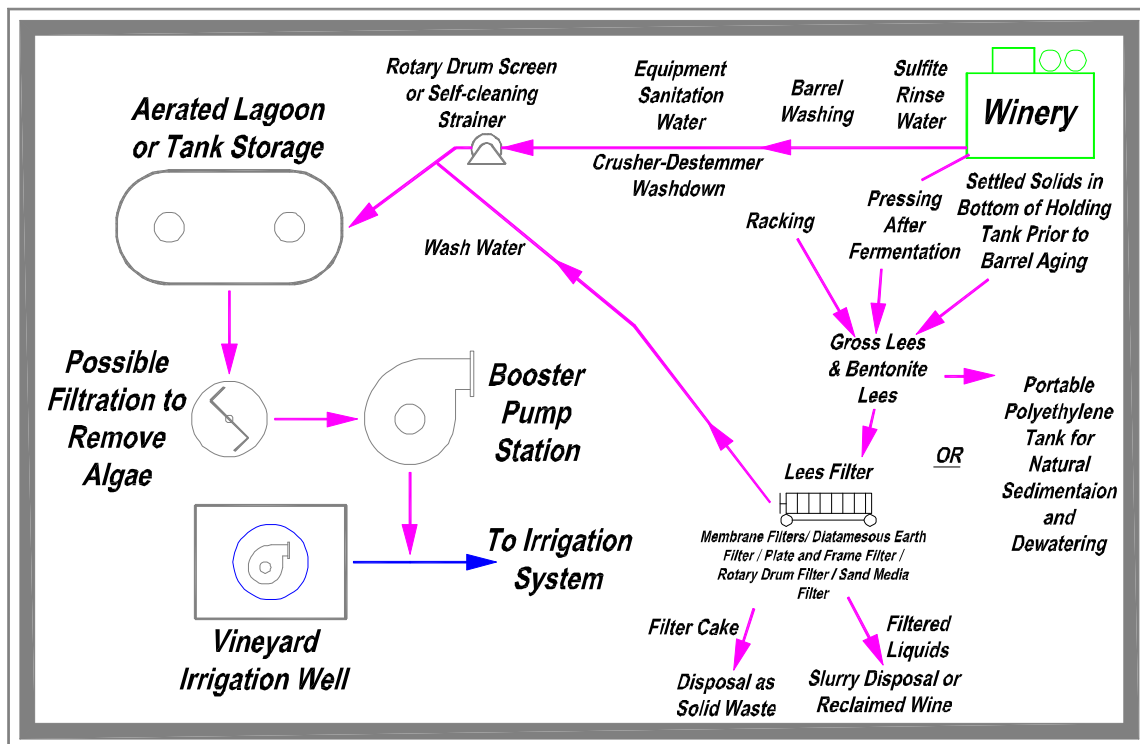


Figure 2-20: Individual Irrigation Lagoon

The high BOD concentration of the wastewater means that open storage lagoons will require aeration to control odors and to provide some aerobic treatment. Aeration of the wastewater will convert soluble organic matter to particulate matter. This improves the retention of the organic matter in the upper part of the soil column and promotes better treatment during passage of the wastewater through the soil. This mode of treatment is quite suitable for the dry climate east of the Cascades.

Figure 2-21 shows a typical annual cycle of a 300,000-gallon irrigation lagoon. The minimum depth in the summer is 4 feet and the maximum winter depth of 8 feet. Wastewater is pulled out of the pond and blended with irrigation water during the months of April, May, September, and October. This is just one of the many schedules that could be chosen for water withdrawal from the lagoon—for instance, water could be drawn out of the lagoon throughout the summer with less withdrawal in the fall if the vineyard operator determined that such a program would better suit the vineyard. Figure 2-12 shows the seasonal water depth of an example pond for an 85-acre vineyard, 20,000 case winery, with a maximum application of 6 pounds BOD/acre/week (with an estimated wastewater BOD concentration of 7000 mg/liter).

For a vineyard of this size, annual irrigation water use would be approximately 41 million gallons (18 inches of water over the vineyard) and wastewater used from the lagoon would be approximately 150,000 gallons/year. The 150,000 gallons of wastewater would need to be

blended with 2.7 million gallons of irrigation water to achieve the maximum loading of 6 lbs/BOD/acre/week that was used for the example. In this example, wastewater is not drawn out of the lagoon during June, July, and August in an effort to keep some water in the lagoon for aesthetic and odor reasons.

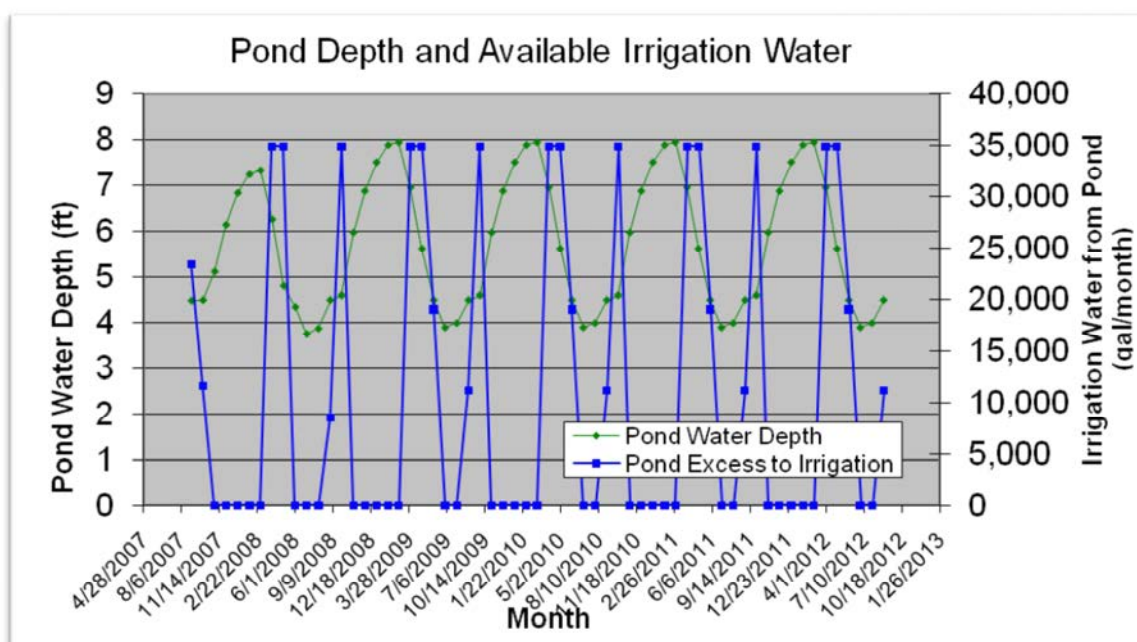


Figure 2-21: Season Irrigation Lagoon Cycle

Settling Tanks/Ponds, Winter Storage, and Land Application

Another option is for a winery to have an anaerobic treatment and settling system with winter storage and land application of wastewater. This system is suitable for a winery with a maximum daily wastewater production of approximately 1,500 gallons. This alternative is not suitable for a winery operation with wastewater containing a high BOD concentration. With this system a winery operator would remove gross lees, bentonite lees, and other BOD as part of the wine production process. Wastewater would be discharged to anaerobic treatment and settling tanks to remove additional settleable solids. A chemical flocculent and/or pH stabilization may need to be added to the settling tanks to encourage additional settling of dissolved organic material as necessary to prevent excessive carryover of organics to the winter storage lagoon. The effluent from the settling tanks will generally be fairly high in BOD. This wastewater will generally be too high in BOD to apply to directly to vineyards, but it could be blended with irrigation water or applied to the soil surface in an area of the property that may not be suitable for growing grapes. Figure 2-22 shows an example of such a system.

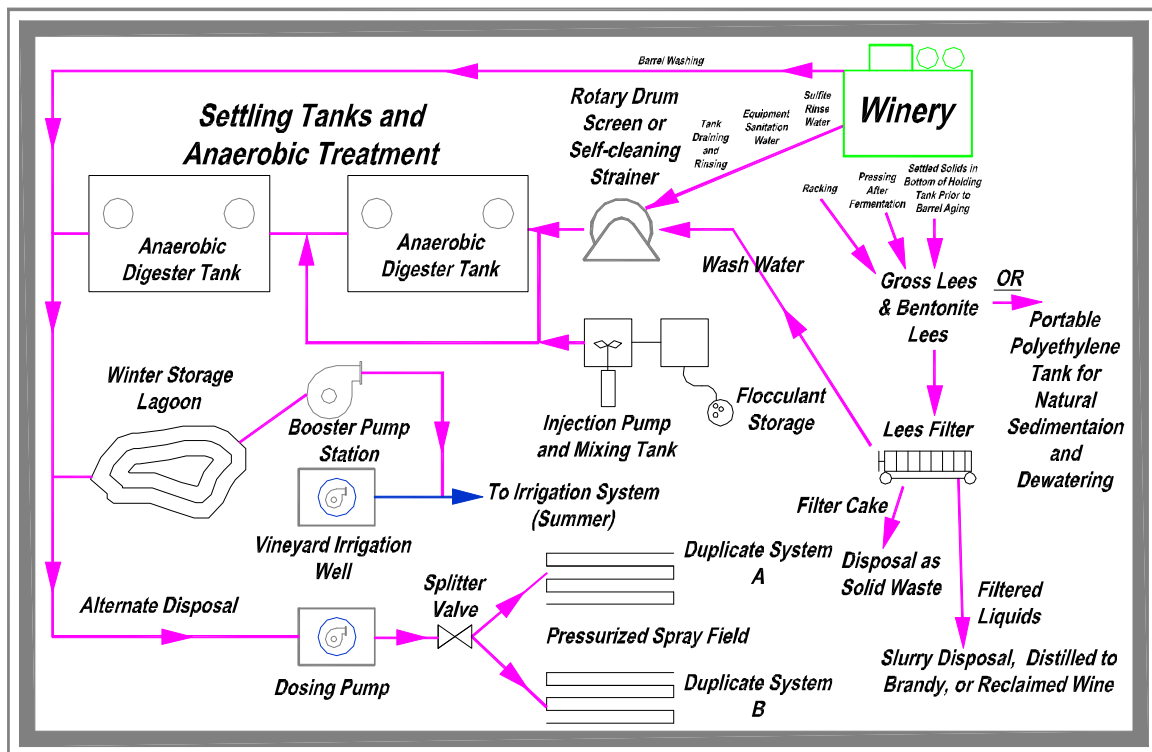


Figure 2-22: Anaerobic Treatment, Settling, and Winter Storage

Soil is a complex biologic community supported by a fine granular mineral or weakly reactive particulate organic matrix. Warm aerobic soil will convert the soluble organic compounds in winery wastewater to carbon dioxide and particulate organic matter, which will be converted to carbon dioxide at a slower rate. Conversion of the organic matter to carbon dioxide requires oxygen. Experience with land application and treatment of other organic-rich wastewaters has established that the effective treatment capacity for warm soil is 10 pounds of soluble BOD per acre per day. For wastewater with 20,000 mg BOD/L (a typical maximum value for a winery), this is equivalent to applying 0.015 inch (1/65th inch) of wastewater per week. Reducing the BOD content to 200 mg/L by treatment (or dilution with irrigation water) would allow application rates up to 1.5 inches per week, as long as the soil does not become saturated. Much of the wastewater will be generated in the late fall and winter, after soil temperatures have declined and the potential soil treatment rate has decreased or not available (frozen conditions). Based on this, the majority of the wastewater will likely need to be stored during the winter. After winter storage, the wastewater from the storage lagoon could be applied to a spray field or blended with irrigation water and applied to the vineyard.

Individual Aerobic Reactor and Clarifying

For larger wineries, with annual production greater than 25,000 cases, the treatment system might need to be more sophisticated to adequately protect the soils and groundwater. One alternative is

to have a complete mixed aerated lagoon primary treatment with clarifying lagoons. The clarifiers are basically primary and secondary settling ponds with sludge return to the aerated lagoon to insure an adequate supply of biological matter. The effluent from such a system would be fairly clean and could be stored during the winter in a lagoon or tank storage prior to vineyard application with irrigation water. Figure 2-23 shows a schematic of such a system.

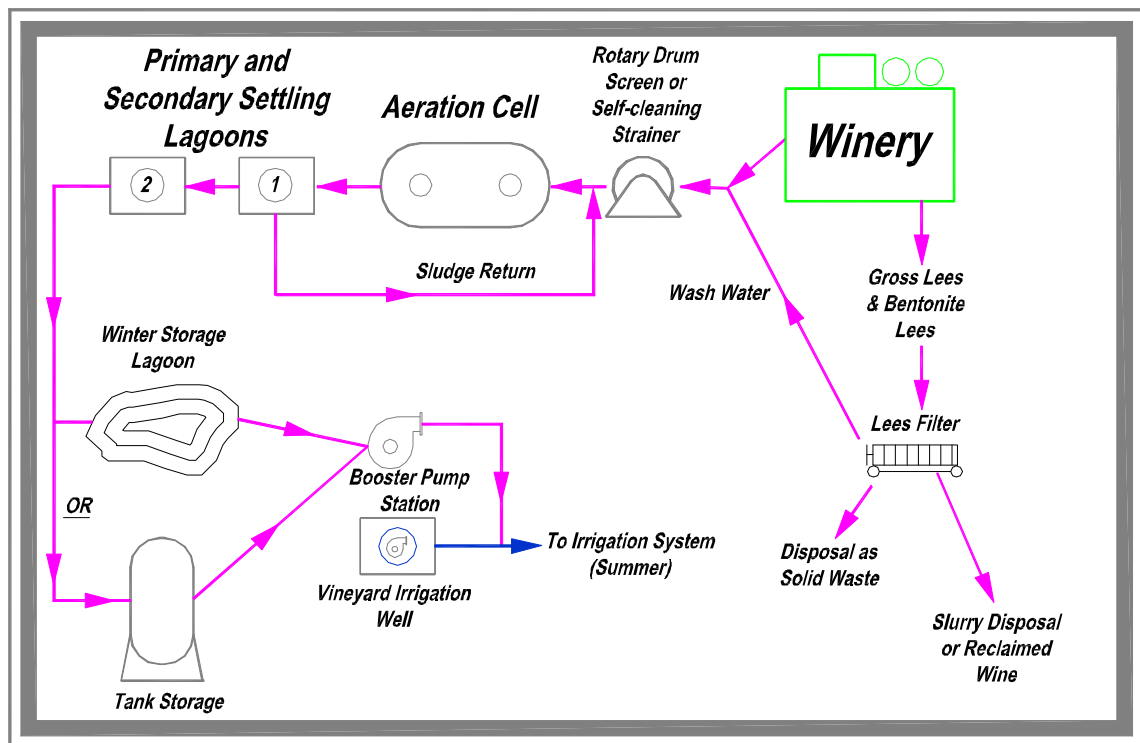


Figure 2-23: Aerobic Treatment with Clarifying Ponds (for Large Wineries)

There are several benefits to diversion of lees waste, such as a reduction in solids loading on the treatment works and reclamation of a significant volume of wine that would otherwise be lost with the lees. Another feature of this system is the “sludge return”. This is used to optimize the performance of the aerobic reactor by supplying freshly settled sludge containing a large and active biomass. The waste settled in the bottom of the settling lagoons can be dried and land applied or hauled off-site through a commercial septic tank pumping service. The operation and maintenance of this type of system would need to be performed by an experienced operator. The winery’s waste treatment operator will need to anticipate the type of wine production operations that are occurring in the winery on any given day and will need to fine tune the operation of the system to insure that the wastewater is receiving adequate treatment prior to discharge to the irrigation storage lagoon.

Regional Solutions

In addition to individual treatment alternatives, several regional treatment solutions for process wastewater were evaluated. Two alternatives were evaluated; regional irrigation lagoon and regional aerobic pass through primary treatment lagoon. The specifics of each alternative are described below.

Regional Irrigation Lagoon

This solution would be similar to individual irrigation lagoons except that the wastewater from each winery would need to be conveyed to the regional irrigation lagoon, which would be located near the low point of the AVA. The lagoon would be aerated to facilitate treatment and to reduce odors. The wastewater effluent from the lagoon would be routed through primary and secondary settlement clarifiers for final treatment and sedimentation and then pumped into the KID irrigation distribution system and blended with irrigation water and applied to landscape and vineyard areas. This lagoon could be built in phases and enlarged as more wineries are connected to the system.

Because of the inevitable growth of algae and potential odor problems associated with high concentrations of lees and other BOD in wastewater, each winery would need to pre-filter lees prior to discharge to the wastewater collection system, or a regional filtration system would need to be implemented. This system alternative is water wise in that wastewater is reused as irrigation. Figure 2-24 depicts this regional alternative.

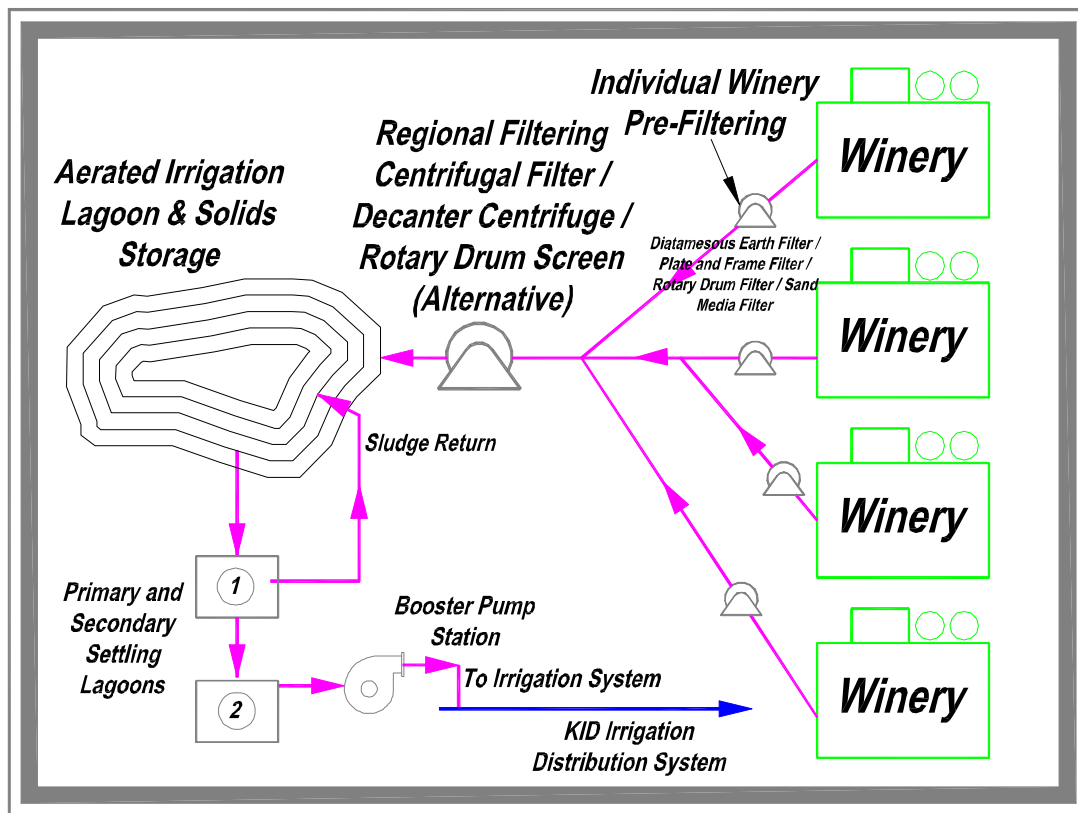


Figure 2-24: Regional Irrigation Lagoon

Conveyance of wastewater from the individual wineries to the regional facility could be accomplished through the use of a piped gravity conveyance network, a pressurized collection system, or through the use of holding tanks and truck delivery to the regional system.

Regional Aerobic Pass-Through Primary Treatment Lagoon

Under this alternative, the AVA wineries would initially convey process wastewater to the regional irrigation lagoon. As more wineries were connected and once the Tourist Serving area was annexed and annexed into the city, municipal sanitary sewer service may be extended, to the tourist serving area and therefore, the irrigation lagoon could be converted to an aerobic pre-treatment lagoon. After pre-treatment in the lagoon, effluent from the lagoon would go the City of West Richland and / or Benton City's wastewater treatment plant. Wastewater would receive adequate pre-treatment such that it would enter the City of West Richland or Benton City sanitary system near residential waste strength, which would not result in high discharge fees. One benefit of this system is that once the sanitary sewer collection system is built to West Richland or Benton City, the lagoon would not need to be enlarged as the Red Mountain AVA develops and more wineries are added. Figure 2-25 depicts a typical schematic of such a system.

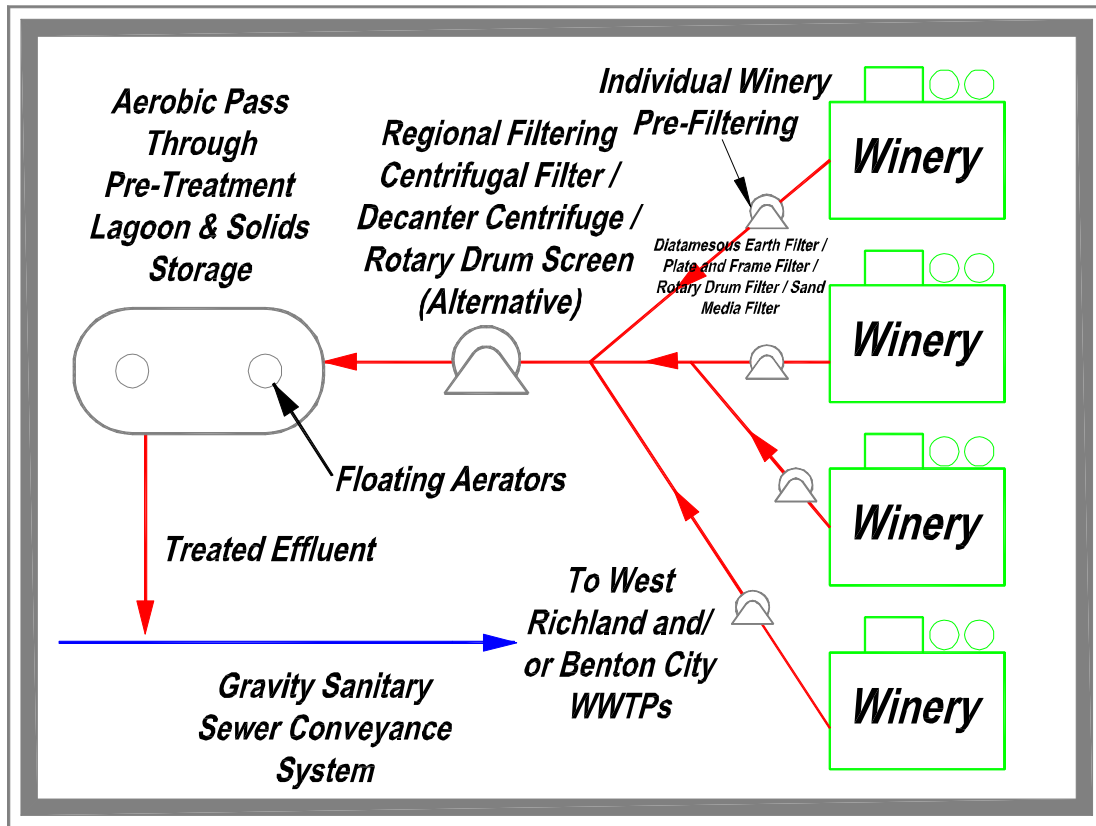


Figure 2-25: Regional Aerated Pass Through Lagoon

Cost Opinions

Preliminary cost opinions were prepared for each individual and regional industrial wastewater treatment alternatives. Table 2-14 summarizes the estimated initial capital costs of each alternative.

Table 2-14: Preliminary Cost Opinions Wastewater Treatment Alternatives

Option Description	<u>Estimated Construction Cost (\$)</u>	<u>Construction Contingency (5%) (\$)</u>	<u>Engineering and Administration (10%) (\$)</u>	<u>Total Estimated Cost (\$)</u>	<u>Cost per Winery^c(\$)</u>
Individual evaporation lagoon ^{a,d}	146,718	7,336	14,672	168,725	168,725
Individual on-site winter storage and irrigation lagoon ^{a,d}	133,148	6,657	13,315	153,120	153,120
Individual settling tanks and spray field ^{a,d}	120,178	6,009	12,018	138,205	138,205
Aerated lagoon and clarifying	153,891	7,695	15,389	176,974	176,974
Regional irrigation lagoon (pressure collection system) ^{a,e}	2,208,414	110,421	220,841	2,539,676	63,492
Regional irrigation lagoon (no collection system, truck delivery) ^a	1,217,958	60,898	121,796	1,400,652	35,016
Regional aerated pass through lagoon (pressure collection system) ^{a, b,e}	1,510,777	75,539	151,078	1,737,393	43,435

^aLees filtration has been excluded from all alternatives in an effort to normalize the alternatives.

^bInitially before the gravity wastewater collection system to West Richland is constructed, the construction cost of this facility would be spread between the approximately 12 existing wineries at a cost of \$135,000 per winery.

^cAssumes 100% participation from the estimated 16 current and proposed wineries within the AVA (40 total).

^dCost estimate based on a 85 acre vineyard producing 20,000 cases/year.

^eCost estimate based on 2,900 acres of vineyard and approximately 680,000 cases/year.

Advantage and Disadvantages

With each process wastewater alternative there are advantages and disadvantages that may transcend a simple cost comparison. Table 2-15 summaries some of the advantages and disadvantages of each winery process wastewater alternative evaluated.

Table 2-15: Comparison of winery process wastewater alternatives		
Option	Advantages	Disadvantages
Individual on-site evaporation pond	Simple Lowest On-Site Solution O&M	Large pond footprint Possible odor issues Algae Buildup in Lagoon Possibly highest on-site cost alternative
Individual on-site irrigation pond	Re-use of Waste Water for Irrigation Preferred Option for DOE Smallest Pond Footprint	Additional filtration may be required (depending on irrigation methods) Must pre-filter yeast prior to discharge to lagoon
Individual on-site solids settling and land application	No Pond High filtration (under re-use alternative)	Winter storage issues Land application issues (large area tied up) Must pre-filter yeast prior to discharge
Aerobic treatment and clarifying	Works well for large wineries Storage Lagoon could be used as a site water feature. Reuses wastewater for irrigation	Requires a skilled operator High initial and operating costs
Regional irrigation pond	Moderate individual user costs Lowest individual O&M and management Quick winery to-market advantage	Huge initial financing hurdles Participation / buy-in Arguably a visual / aesthetics issue Odor? Consensus on location
Regional aerated pass through lagoon to West Richland WWTP	Minimizes size of regional lagoon Low individual O&M and management Lowest total capital cost per winery	Cost of system must initially be borne by few property owners Participation / buy-in Consensus on location Addition of future wineries would be limited until piped system to West Richland is constructed

All reviewed sanitary sewer alternatives are viable and will work for Red Mountain AVA wineries. The ultimate selection of a specific wastewater treatment alternative will depend on winery practices, wastewater constituents, site configuration, preference and other variables.

Shared Facilities

If a group of wineries were interesting in the formation of a co-op, they could realize savings associated with winery equipment and wastewater handling. A group of wineries could share a crusher/de-stemmer, lees filtering equipment, bottling facility, and even a wastewater treatment and reuse facility. Such a co-op could be beneficial to start-up wineries that are more able to pay monthly operating expenses than large capital expenses.

3. VISITOR PROJECTIONS

The visitor studies consisted of four (4) elements:

1. A survey of current visitors to Red Mountain American AVA wineries, included here as the *Red Mountain AVA Winery and Vineyard Visitor Study*
2. An online survey targeting Red Mountain wine club members in Washington, Oregon and Idaho; Online Survey of Potential Visitors to Red Mountain AVA (Potential Visitors)
3. Interviews of Red Mountain winery personnel
4. A research analysis and compilation (review of research studies of wine tourism development and international and national wine drinkers)

These data were used to determine capacities of such facilities and infrastructure as parking, visitor center(s), and roads as well as other “attractions” proposed for the master plan for the Red Mountain AVA. The following reports are the results of the above activities.

RED MOUNTAIN AVA WINERY AND VINEYARD VISITOR STUDY (CURRENT VISITORS)

The purpose of the Red Mountain AVA Visitor Study was to profile the current visitors and investigate their likelihood of visiting the area upon completion of the development planned. Four (4) wineries in the Red Mountain AVA; Hedges Family Estate, Kiona Vineyards Winery, Seth Ryan Winery, and Terra Blanca were identified as having the most open hours and thus more survey distribution; however, the questions on the questionnaire addressed the entire Red Mountain AVA.

The questionnaire was implemented beginning August 5, 2006. Each of the four (4) wineries was visited and permission was gained from the owner or manager. Through this process, it was determined data collection would continue through November 2006. All owner/managers indicated the visitors varied during this time frame. Table 3-1 indicates the number of surveys collected during each of the months. These data do not indicate the visitation levels at the wineries due to the nature of the sampling. Each winery received a supply of questionnaires, directions for staff, information sheets, contact cards, writing utensils, and posters. The winery staff was asked to encourage visitors to complete the questionnaire. Participation was not required and visitors self-selected. An incentive was provided for completion of the survey.

Various analyses were completed in order to describe the winery visitors including analyzing differences between respondents whose primary residence was in the Tri-Cities zip code and those not in the Tri-Cities zip code (Non Tri-Cities). When significant differences were seen

between Tri-Cities Resident Visitors and Other Visitors (Non Tri-Cities), the results are reported separately. A total of 596 surveys were deemed usable and are included in the results.

Table 3-1: Number of surveys completed by month		
Month	#	%
August 2006	129	21.6
September 2006	333	55.9
October 2006	77	12.9
November 2006	57	9.6
Total	596	100.0

Demographics

Washington dominated the residence of the respondents (n=423, 76.3%). (see Table 3-2) The highest number of visitors was split between Western Washington and the Tri-Cities area.

Table 3-2: Zip Code (postal code) at primary residence		
Area	#	%
Western Washington	190	34.3
Tri-Cities	189	34.1
Oregon and Idaho	48	8.7
Other Eastern Washington	44	7.9
Montana, California and Alaska	26	4.7
East Coast	21	3.8
Mid-section of U.S. including from MN to TX	15	2.7
Southeast	9	1.6
West	6	1.1
Canada and I from the UK	6	1.1
Total	554	100.0

NOTE: Discrepancies are due to non-reporting of zip or other data on comparison items

The three (3) variables of Gender, Income, and Age (Figure 3-1; Tables 3-3 and 3-4 respectively) had no significant differences between the visitors from the Tri-Cities and non Tri-Cities visitors. Sixty percent of the respondents were female, 48.6% had a household income greater than \$100,000.00 per year, and 59.5% were either from 51 to 60 years of age (35.0%) or from 41 to 50 years of age (21.5%).

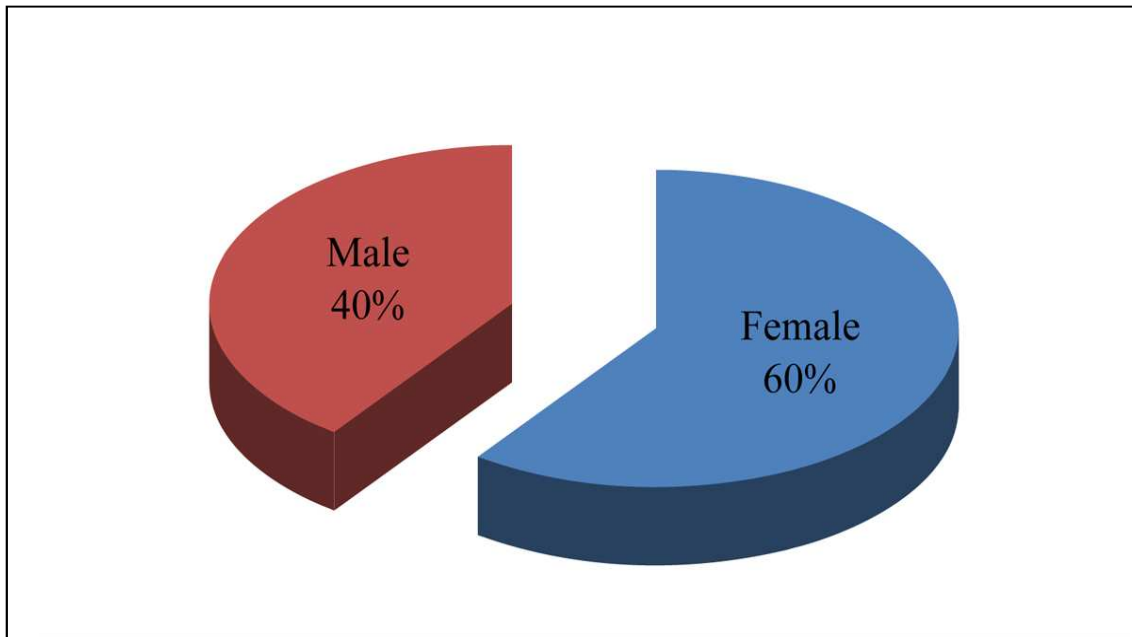


Figure 3-1. Gender

Table 3-3: Annual Household Income

Income Level	#	%
Less than \$25,000	14	2.7
\$25,000 to \$39,999	30	5.8
\$40,000 to \$59,999	57	10.9
\$60,000 to \$79,999	71	13.6
\$80,000 to \$99,999	94	18.0
More than \$100,000	255	48.9
Total	521	100.0

Table 3-4: Age of the respondents

Age Range	#	%
21-30 years old	51	8.6
31 to 40 years old	85	14.3
41-50 years old	128	21.5
51-60 years old	208	35.0
61-70 years old	94	15.8
Over 70 years of age	28	4.7
Total	594	100.0

The mean number of individuals traveling together in one party was 3.83 with a mean of 2.46 males (n=515) and 2.66 females (n=493). (see Table 3-5) A very small number (n=27) of the

respondents reporting traveling with children or teens. A comment was made that the next time they would bring his/her children as the wineries were “kid friendly.”

Table 3-5: Party Size

All Respondents	Mean	#
Adult Males (over 21 years)	2.46	515
Adult Females (over 21 years)	2.66	493
Children/Teens (less than 21)	1.7	27
Total	3.83	
Tri-Cities		
Adult Males (over 21 years)	2.64	163
Adult Females (over 21 years)	3.13	155
Children/Teens (less than 21)	1.33	12
Total	4.49	
Non Tri-Cities		
Adult Males (over 21 years)	2.41	312
Adult Females (over 21 years)	2.48	309
Children/Teens (less than 21)	2.08	13
Total	3.53	

Wine Behavior

Frequency of wine consumption, winery visitation, and other “wine behavior” has been reported on other locations around the world. A “wine lifestyle” or level of wine expertise has been shown to indicate visitation. This survey did not ignore this knowledge and requested responses to questions related to consumption and purchasing. Table 3-6 reports the frequency of wine consumption. The respondents drink wine either *one or two times per week* (36.0%) or *almost every day* (46.3%). Tri-Cities residents drink wine *one or two times per week* (43.3%) where the Non Tri-Cities residents drink wine *almost every day* (53.4%).

Table 3-6: Frequency of wine consumption

	All		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
Never I am not a wine drinker	10	1.7	1	0.5	8	2.2
Only on special occasions	31	5.2	14	7.5	15	4.1
One or two times per month	64	10.8	34	18.2	28	7.7
About 1 or two times per week	213	36.0	81	43.3	118	32.5
Almost every day	274	46.3	57	30.5	194	53.4
Total	592	100.0	187	100.0	363	100.0

The number of wineries or tasting rooms visited in the last year (Table 3-7) and the number of Eastern Washington wineries or tasting rooms visited in the last year (Table 3-8) indicated a high level of participation both with Tri-Cities residents and Non Tri-Cities residents. The proximity to a location for leisure activities correlates highly with level of participation. This correlation is seen in the difference based upon residence in visitation to the Eastern Washington wineries as

Tri-Cities residents have visited more frequently. Thirty-three and 1/10% of Non Tri-Cities residents were visiting an Eastern Washington winery for the first time. There is an opportunity for all Eastern Washington wineries including Red Mountain wineries as many times the first visit is perceived as a positive experience insures a return visit.

Table 3-7: Number of wineries or wine tasting room visited in the last year

	All Respondents		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
This is my first trip to a winery	61	10.3	10	5.3	48	13.2
1-2 wineries	51	8.6	9	4.8	39	10.7
3-10 wineries	226	38.0	84	44.4	124	34.2
11 to 20 wineries	113	19.0	41	21.7	65	17.9
More than 20 wineries	143	24.1	45	23.8	87	24.0
Total	594	100.0	189	100.0	363	100.0

Table 3-8: Number of Eastern Washington wineries or wine tasting room visited in the last year

	All Respondents		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
This is my first trip to a winery	143	24.1	14	7.4	120	33.1
1-2 wineries	50	8.4	14	7.4	34	9.4
3-10 wineries	209	35.2	76	40.4	117	32.2
11 to 20 wineries	105	17.7	42	22.3	54	14.9
More than 20 wineries	86	14.5	42	22.3	38	10.5
Total	593	100.0	188	100.0	363	100.0

The respondents also traveled taking extended trips to wine regions. They took an average of 3.25 trips in the last three (3) years with at least 2 nights away from home. No significant difference was found between Tri-Cities residents and Non Tri-Cities residents. Table 10 lists the destinations for these “wine tours”. 52.7% of the respondents had visited one of the following four (4) wine regions; 1) Yakima Valley including Yakima, Zillah, and Prosser; 2) Walla Walla; 3) Napa and/or Sonoma; and 4) Oregon (see Table 3-9).

They were asked what influences their decision to visit a particular region and the top three (3) influences were:

- 1) Prior experience with the wines of the area
- 2) Recommendation from a friend or family
- 3) Distance to the area from home (see Table 3-10)

Table 3-9: Wine areas where wine trips occurred

Wine Region	All Respondents	
	#	%
Yakima/Prosser/Zillah	111	15.3
Walla Walla	104	14.4
Napa and/or Sonoma Valley	91	12.6
Oregon	75	10.4
Columbia Valley Area	71	9.8
Eastern Washington (not specified)	45	6.2
Western Washington	35	4.8
Southern California (i.e. Santa Ynez)	34	4.7
West Excluding WA OR CA	26	3.6
British Columbia	23	3.2
North California (All other regions)	18	2.5
California (not specified)	17	2.3
Washington state (not specified)	12	1.7
New York and Other East Coast	12	1.7
France	10	1.4
Italy	8	1.1
Canada (excluding British Columbia)	6	0.8
New Zealand/Australia	5	0.7
Midwest	4	0.6
Georgia, Tennessee, Alabama	4	0.6
South Africa	4	0.6
Chile and Argentina	3	0.4
Texas	2	0.3
Spain	2	0.3
Germany & Austria	2	0.3

Table 3-10: Influences when selecting a particular wine region to visit

List of Influences	All		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
Prior experience with the wines of the area	410	68.8	136	21.6	247	22.7
Recommendation from a friend or family	367	61.6	112	17.8	232	21.3
Distance to the area from your home	240	40.3	96	15.2	132	12.1
Advertising	44	7.4	19	3.0	21	1.9
Prior visit	235	39.4	87	13.8	134	12.3
You are with a group	131	22.0	50	7.9	75	6.9
A particular winery you want to visit	292	49.0	92	14.6	176	16.1

Table 3-10: Influences when selecting a particular wine region to visit

List of Influences	All		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
Other attractions or activities in the area	122	20.5	38	6.0	73	6.7

Red Mountain AVA Visit

The current trip to Red Mountain was also described by the respondents (Table 3-11). The type of trip the respondents were on reflected their residential location. Only Non Tri-Cities Residents are reported as the Tri-Cities residents were on a day trip. A large portion of Non Tri-Cities Residents were on a *multi-day trip* and Red Mountain AVA was part of that trip (n=218, 60.7%). 17.5% (n=63) indicated that Red Mountain AVA was their *primary destination*. The mean number of nights away from home of Non Tri-Cities Residents was 4.22.

**Table 3-11: Description of this visit to Red Mountain AVA?
Non-Tri-City Residents only**

Type of Visit	#	%
Day trip from home	78	21.7
Multi-day trip with Red Mountain as the primary destination	63	17.5
Multi-day trip with Red Mountain as part of a larger trip	218	60.7
Total	359	100.0

The respondents indicated that their primary destination was in the Pacific Northwest and also to such locations as California, but 57.7% indicated that Eastern Washington or the Tri-Cities were their primary destination (Table 3-12). Twenty-seven percent were in the area for some purpose such as business, or an event not related to wine tourism (for example, a wedding).

Table 3-12: Primary destination if Red Mountain is part of a larger trip

Destination	#	%
Idaho	80	27.0
Purpose Based	80	27.0
Walla Walla or other Eastern Washington Locale	46	15.5
Tri-Cities	45	15.2
Oregon	12	4.1
Midwest upper tier WI MI MN WY	11	3.7
Western Washington	9	3.0
Pacific Northwest	7	2.4
"Home"	2	0.7
British Columbia	2	0.7
Napa Valley and other California Wineries	2	0.7

Even with the large number of respondents residing in Washington, 46.6% (n=227) were visiting the Red Mountain AVA for the first time (see Table 3-13). This number is deceiving, however, as 62.4% (n=118) of the Tri-Cities respondents had visited over 3 times and 60.2% (n=219) of the Non Tri-Cities respondents were visiting for the first time. Even with the number of the Non Tri-Cities residents visiting for the first time, 74.7% (n=437) respondents for both groups were aware of Red Mountain wineries and wines.

Table 3-13: Number of times visited the Red Mountain AVA

	All		Tri-Cities		Non Tri-Cities	
	#	%	#	%	#	%
First visit	277	46.6	40	21.2	219	60.2
1-3 times	109	18.3	31	16.4	66	18.1
Over 3 times	209	35.1	118	62.4	79	21.7
Total	595	100.0	189	100.0	364	100.0

The amount of money spent on wine and wine-related items during this particular trip was indicated for all wineries visited and for Red Mountain AVA. Table 3-14 indicates a mean response of \$308.34 overall and \$173.28 at Red Mountain wineries only. There was a statistical significant difference between the amount spent by Tri-Cities and Non Tri-Cities Residents. It is

interesting to note that the Tri-Cities spend less; however, they visit more often. With this in mind, individuals taking local or day trips should not be discounted relative to long-haul tourists, especially during the winter months.

Table 3-14: Amount spent at wineries overall and at Red Mountain AVA this trip.

	All	Tri-Cities	Non Tri-Cities
	Mean	Mean	Mean
Approximately how much will you or are you planning on spending on wine and other wine related items on this trip?	\$307.05	\$117.05	\$403.08
Approximately how much will you or are you planning on spending on wine or wine related items from Red Mountain on this trip?	\$176.13	\$102.54	\$216.57

The number of wineries visited (see Table 3-15) also reflects the longer trips taken by Non Tri-Cities residents. If an assumption is made that Red Mountain AVA visits were completed in one (1) day, average daily visits were 3.68, which reflects previous research reporting 3 to 4 wineries per day.

Table 3-15: Number of wineries visited or are planning on visiting on this trip

	All Respondents	Tri-Cities	Non Tri-Cities
	Mean		
On this trip, how many wineries have you and your party visited or are you planning on visiting?	7.09	4.67	8.62
On this trip, how many Red Mountain wineries have you and your party visited or are you planning on visiting?	3.68	3.42	3.9

A description of the Red Mountain AVA Conceptual Plan was included and individuals were asked to indicate whether they would visit; whether they would visit more than 1 time; and whether they would visit for longer than 1 day. They were asked to respond on a scale from 1=Definitely Yes to 10=Definitely No. The mean response to each of these questions is shown in Table 3-16. Tri-Cities and Non Tri-Cities resident responses are reported separately.

Imagine that you are choosing a destination for a weekend trip to Washington Wine Country. The Red Mountain AVA now has 40 wineries linked together by a two-lane paved road bordered by vineyards. Interpretive paths and hiking and biking trails link the Wine and Artisan Village and wineries. The Village contains shops, a village green, picnicking and children's play areas, dining, lodging, interpretive displays, and meeting facilities.

Table 3-16: Response to Scenario

	All	Tri-Cities	Non Tri-Cities
	Mean		
Would you visit?	2.25	2.12	2.3
Would you visit more than 1 time?	2.62	2.17	2.87
Would you visit for longer than 1 day?	3.45	4.21	3.05

Finally, respondents were asked an open-ended question about what they enjoyed most about this visit. Table 3-17 lists the categorized responses. The top three (3) responses were 1) “The Wine”, 2) Friendly Servers or Staff, and 3) Scenery or Landscape. It is interesting that “The Wine” as the top item enjoyed is supported by the fact that respondents were aware of Red Mountain AVA and had prior experience with the region. An assumption could be made that they had tasted Red Mountain wines and were interested in visiting the actual production facilities of wines they already enjoyed. They also spent money on wine while visiting.

Table 3-17: What was enjoyed most about this visit

Category	#	%
The Wine	159	25.0
Friendly Servers/Staff	118	18.6
Scenery or Landscape	73	11.5
Climate or Weather	38	6.0
Companions and other Activities	37	5.8
Information on Wines and Tours	32	5.0
Atmosphere	30	4.7
Tasting Room	26	4.1
Tasting	22	3.5
Specific Winery	21	3.3
Good Time	19	3.0
Variety	17	2.7
Winery/Vineyard Atmosphere	17	2.7
Good Service	10	1.6
People Generally	9	1.4
Food	6	0.9
Proximity	2	0.3

ON LINE SURVEY OF POTENTIAL VISITORS TO RED MOUNTAIN AVA (POTENTIAL VISITORS)

The purpose of the research was to describe the residents living in Oregon, Washington and Idaho most likely to visit the Red Mountain AVA (Potential Visitors). A survey was designed, tested, and implemented containing questions on 1) general wine behavior, 2) wine tourism behavior, 3) preferences for visiting wineries and wine regions, 4) opinion on the Red Mountain Conceptual Plan proposed, and 5) demographics. Members of wine clubs and enological societies located in

Oregon, Washington and Idaho were contacted via club leadership. An email notice was sent to club leadership and forwarded to membership. The notice requested members to access the survey at <http://www.surveymonkey.com/winelovers> and complete the survey. The survey was accessible to “wine lovers” from May to June 2007. Respondents self-selected. Three hundred fifty usable surveys were received.

The respondents were asked where they had heard about the survey (see Table 3-18). The majority of the respondents (66.3%) had heard about the survey from their wine club. Accessing respondents through a wine club or society was the recruiting tool used.

Table 3-18: Where did you hear about this survey?		
	#	%
Wine Club	232	66.3
Internet	40	11.4
Word of Mouth	35	10.0
Wine Ambassadors	21	6.0
NW Wine Press Web	11	3.1
Wine Event	6	1.7
Washington Wine Commission	5	1.4
Total	350	100.0

Demographics

The majority (59.5%, n=207) of the respondents were residents of the Puget Sound area ranging from Everett to Olympia (see Table 3-19). A total of 317 or 91.1% were residents of Washington State. Again, this reflects the recruiting method used as the wine clubs were contacted in Washington, Oregon, and Idaho. The highest number of wine clubs or societies was located in Washington State.

Table 3-19: Zip Code at primary residence		
Zip Code Area	#	%
Puget Sound	207	59.5
Tri Cities	45	12.9
Eastern Washington except Tri Cities	33	9.5
Other Western Washington (Vancouver, Olympic Peninsula)	32	9.2
Oregon	15	4.3
Idaho	4	1.1
Montana, California and Alaska	4	1.1
Georgia	3	0.9
Minnesota, Texas, and Ohio	2	0.6
International	2	0.6
West	1	0.3
Total	348	100.0
NOTE: Discrepancies are due to non-reporting of zip or other data on comparison items		

The gender of the respondents is shown in Figure 3-2. The respondents were fairly evenly split between males and females.

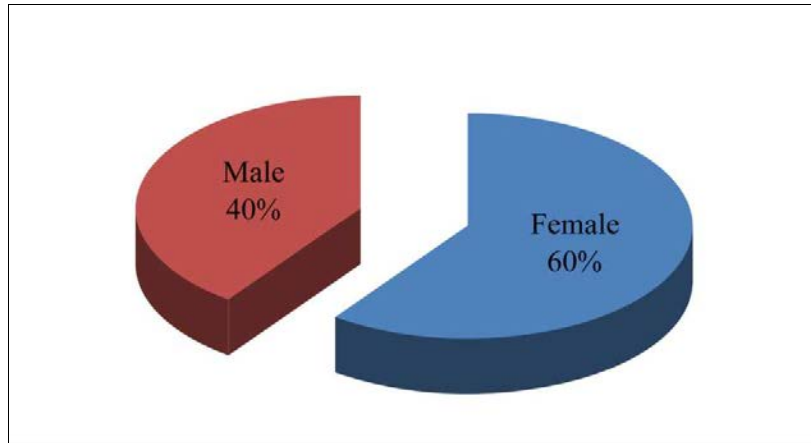


Figure 3-2. Gender of Respondents

The majority of the respondents were from *51 to 60 years old* (36.6%) and *41 to 50 years old* (22.5%) (See Table 3-20). The age of the respondents reflected results seen in the Red Mountain Visitor Study (Current Visitors) completed in 2006.

Table 3-20 : Age of respondents		
	#	%
21 to 30 years old	15	4.7
31 to 40 years old	58	18.1
41 to 50 years old	72	22.5
51 to 60 years old	117	36.6
61 to 70 years old	48	15.0
71 to 80 year old	9	2.8
Over 80 years of age	1	0.3
Total	320	100.0

The highest level of education held by the majority of the respondents was a college or university degree (bachelor's degree) or higher (72.1%; see Table 3-21).

Table 3-21: Highest level of education		
	#	%
Some high school	0	0.0
Completed high school or GED	7	2.2
Vocation or trade school	10	3.1
Some college/university	46	14.4
Two year degree	26	8.2
Four year degree	140	43.9
A graduate degree (e.g. M.S., Ph.D. or an M.D.)	90	28.2
Total	319	100.0

The number of people living in the individual's household including himself or herself was 2.16 (mean). The range of responses was from 1 to 5 with the majority of households containing two

(2) individuals (n=190; 59.2%). Respondents were given a list of professions and asked to check the item that most closely reflects his or her profession currently. Management (19.3%), Retired (16.8%) and Technical (16.1%) were the more frequent responses. “Other” included such positions as Professional or Administrator.

Table 3-22: Profession		
Type of position	#	%
Management	61	19.3
Retired	53	16.8
Technical	51	16.1
Sales	31	9.8
Educator	22	7.0
Medical	16	5.1
Government	14	4.4
Financial or Accounting	14	4.4
Self-employed or Consultant	13	4.1
Marketing or Media	8	2.5
Law	5	1.6
Agriculture/Forestry/Sciences	5	1.6
Trades	4	1.3
Recreation or Tourism	4	1.3
Food and Beverage	4	1.3
Other	4	1.3
At Home or Volunteer	3	0.9
Veterinarian	2	0.6
Unemployed	1	0.3
Real Estate	1	0.3
Student	0	00.0
Total	316	100.0

Table 3-23 indicates the income level of the respondents. The majority of the respondents had an income over \$100,000.00 (54.1%). These results also reflect the income level of the Red Mountain Visitors (Current Visitors) from 2006.

Table 3-23: Annual household income		
Income	#	%
Less than \$25,000	1	0.3
\$25,001 to \$39,999	12	4.2
\$40,000 to \$59,999	30	10.5
\$60,000 to \$79,999	46	16.1
\$80,000 to \$99,000	42	14.7
\$100,000 to 124,999	75	26.2
\$125,000 to 149,999	32	11.2
\$150,000 to 199,999	29	10.1
\$200,000 to 250,000	9	3.1
Over \$250,000	10	3.5
Total	286	100.0

Wine Behavior

The respondents were asked *how many wine clubs sponsored by a winery (Winery Clubs) they belong to?* The respondents either did not belong to any winery wine clubs (37.8%) or belonged to only 1 or 2 clubs (38.1%) (see Table 3-24).

Table 3-24: Winery wine club membership

	#	%
Do not belong	132	37.8
1 to 2 clubs	133	38.1
3 to 4 clubs	50	14.3
5 or more clubs	34	9.7
Total	349	100.0

Wine oriented activities were seen by the respondents to be *one of my more important leisure activities* (65.0%; n=227) (see Table 3-25). This is also reflected in their frequency of wine consumption (Table 3-26) as they are consuming wine either *almost every day* (46.0%) or *3 or 4 times per week* (28.3%).

Table 3-25: Importance of wine oriented activities compared with other leisure activities

	#	%
My most important leisure activity	22	6.3
One of my more important leisure activities	227	65.0
No more important than any leisure activity	79	22.6
Less important than most of my other leisure activities	19	5.4
Not at all important to me as a leisure activity	2	0.6
Total	349	100.0

Table 3-26: Frequency of wine consumption

	#	%
Never I am not a wine drinker	0	0.0
Only on special occasions	3	0.9
One or two times per month	12	3.7
About 1 or two times per week	68	21.1
3 or 4 times per week	91	28.3
Almost every day	148	46.0
Total	322	100.0

Respondents were asked to rank the top 3 types of location where they most often purchase wine when not traveling. *At the Grocery Store* (mean= 1.92) and *Through a wine club* (mean=1.96) gained the highest average ranking; however, *At the Grocery Store* (74.8%) and *At a Specialty Store* (56.1%) were most often used (see Table 3-27).

Table 3-27: When not traveling, where do you most often purchase wine? (n=350)

	Mean	Rank 1	Rank 2	Rank 3	Total	%
At a Grocery Store	1.92	130	76	58	264	75.4
Through a Wine Club	1.96	39	45	43	127	36.3
At a nearby Winery	2.05	60	68	55	183	52.3
At a Specialty Store (i.e. wine, gourmet, gift)	2.15	64	58	76	198	56.5
At a Discount Retailer (i.e. Costco, Target)	2.21	38	70	56	164	46.9
Through a Website	2.69	11	13	19	43	12.3
At a Government Liquor Store	2.71	13	18	36	67	19.1
Portion of respondents choosing location as 1, 2 or 3						

They purchase wine at these locations and spend from \$8.00 to \$15.00 (42.1%) or \$16.00 to \$25.00 (37.0%) when they are at home (see Table 3-28). When traveling, however, the respondents spend more money on a bottle of wine; \$16.00 to \$25.00 (47.7%) or \$26.00 to \$35.00 (28.5%).

Table 3-28: How much do you usually spend on a bottle of wine at home and when traveling

	At Home		When Traveling	
	#	%	#	%
Less than \$8.00	10	2.9	2	0.6
\$8.00 to \$15.00	147	42.1	51	15.8
\$16.00 to \$25.00	129	37.0	154	47.7
\$26.00 to \$35.00	48	13.8	92	28.5
\$36.00 to \$50.00	12	3.4	21	6.5
Over \$50.00 per bottle	3	0.9	1	0.3
Total	349	100.0	323	100.0

Visiting Wine Regions

A series of questions asked about his or her visitation to selected northwest wine regions and also about a recent extended trip taken to a wine region. The minimum number of wineries needed when trying to decide upon a wine region to visit for a weekend was 7.84 wineries. Figure 3-3 shows that from 5 to 7 wineries are preferred by 34.2% of the respondents.

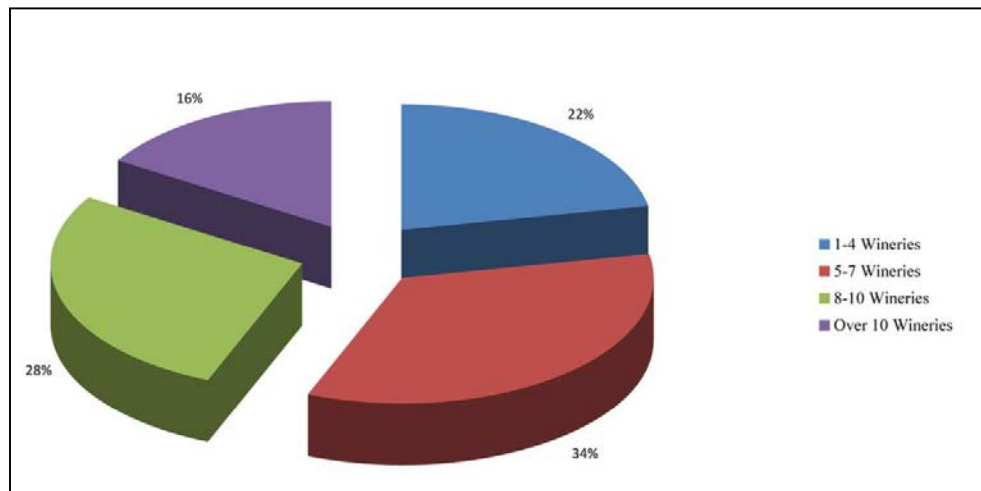


Figure 3-3. Preferred Number of Wineries for an Overnight Trip

A list of wine regions was provided and respondents were asked to indicate the number of trips taken to the wine region during 2006 and so far in 2007. Table 3-29 is a display of the results. The most visited regions were 1) *tied* Woodinville and Yakima Valley, 2) Walla Walla, 3) Red Mountain. Red Mountain is the fourth most-visited region among the respondents. Red Mountain AVA was not mentioned specifically in any of the instructions on the survey.

Table 3-29: Number of trips taken to the following wine regions during 2006 and so far in 2007

Wine Region	Total Responses #								# of trips
		0 trips	1 trip	2-3 trips	4-5 trips	more than 5 trips	Took a trip of any duration	Took a trip of any duration	
	#	#	#	#	#	#	#	%	Mean
Columbia Cascade, WA including Wenatchee, Leavenworth & Chelan	305	158	87	50	4	6	147	48.2	1.9
Okanagan Valley, British Columbia	290	243	40	6	1	0	47	16.2	1.3
Red Mountain, Washington	301	126	84	57	18	16	175	58.1	2.4
Snake River Valley, Idaho	276	264	11	1	0	0	12	4.3	1.1
Southern Oregon	280	227	45	6	1	1	53	18.9	1.3
Spokane, WA	287	214	44	22	4	3	73	25.4	1.9
Walla Walla, Washington	299	122	102	47	17	11	177	59.2	2.1
Willamette Valley, OR	296	160	89	32	9	6	136	45.9	1.8

Table 3-29: Number of trips taken to the following wine regions during 2006 and so far in 2007

	Total Responses	0 trips	1 trip	2-3 trips	4-5 trips	more than 5 trips	Took a trip of any duration	Took a trip of any duration	# of trips
Wine Region	#	#	#	#	#	#	#	%	Mean
Woodinville, WA	318	90	54	61	36	77	228	71.7	4.0
Yakima Valley including Zillah, Prosser, & Yakima, WA	311	88	107	72	19	25	223	71.7	2.5

Table 3-30 displays the number nights spent in the wine region they visited. The nights spent in the region ranged from 1.62 to 2.63 nights with shortest stays at Red Mountain. The greatest number of nights spent was in the Okanagan Valley followed by the Columbia Cascade region.

Table 3-30: Number of nights spent in the region(s) visited

Wine Region	Mean	Median	Mode	#	%
Columbia Cascade, WA including Wenatchee, Leavenworth & Chelan	2.45	2	1	11	31.8
Okanagan Valley, British Columbia	2.63	2	2	43	12.2
Red Mountain, Washington	1.62	1	1	73	20.7
Snake River Valley, Idaho	2.13	2	1	23	6.5
Spokane, WA	2.2	2	1	54	15.3
Walla Walla, Washington	1.93	2	1	13	38.4
Willamette Valley, OR	2.24	2	2	10	31.0
Woodinville, WA	2	1	1	41	11.6
Yakima Valley including Zillah, Prosser, & Yakima, WA	1.92	2	1	13	37.2

Events did not seem to motivate this group as fewer than 25% of the respondents had attended an event during their visit except when visiting Woodinville (26.4%) (see Table 3-31).

Table 3-31: Attendance at a wine when in the wine region(s)

Wine Region	#	%
Columbia Cascade, WA including Wenatchee, Leavenworth & Chelan	34	6.7

Table 3-31: Attendance at a wine when in the wine region(s)

Wine Region	#	%
Okanagan Valley, British Columbia	13	2.6
Red Mountain, Washington	70	13.9
Snake River Valley, Idaho	4	.8
Southern Oregon	10	2.0
Spokane, Washington	21	4.2
Walla Walla, Washington	76	15.1
Willamette Valley, OR	43	8.5
Woodinville, WA	133	26.4
Yakima Valley including Zillah, Prosser, & Yakima, WA	100	19.8
Total	504	100.0

The respondents indicated that in the future they would be taking longer trips as 30.0% were definitely taking at least one overnight wine tasting trip and 36.3% will probably be taking day trips and a longer trip (see Table 3-32).

Table 3-32: Future plans for wine trips for the remainder 2007 into 2008?

	#	%
I will definitely be taking at least 1 day trip to taste wine at a winery	64	20.0
I will definitely be taking at least one overnight wine tasting trip	96	30.0
I will probably be taking many day trips	41	12.8
I will probably be taking day trips and a longer trip	116	36.3
I will not be taking any wine related trips	1	0.3
Other	2	0.6
Total	320	100.0

Respondents were asked to name their favorite wine region. Table 16 categorizes the open-ended responses. The top three areas identified were 1) Walla Walla, 2) Yakima Valley, and 3) Red Mountain.

Table 3-33: Favorite Wine Region

	#	%
Walla Walla	91	30.8
Yakima Valley including Yakima/Prosser/Zillah	59	20.0
Red Mountain	29	9.8
Oregon	23	7.8
Woodinville area	21	7.1
Napa Valley and/or Sonoma	15	5.1
Columbia Cascade	11	3.7
California excluding Napa Valley and Sonoma	7	2.4

Table 3-33: Favorite Wine Region

	#	%
No preference or Any	7	2.4
Columbia Valley Area	5	1.7
Eastern Washington (not specified)	5	1.7
Okanagan Valley, BC	5	1.7
Washington State (not specified)	3	1.0
New Zealand/Australia	3	1.0
France	2	0.7
Chile/Argentina	2	0.7
Spokane	2	0.7
Idaho	1	0.3
Italy	1	0.3
South Africa	1	0.3
Germany	1	0.3
Europe (not specified)	1	0.3
Total	295	100.0

A Recent Overnight Visit to a Wine Region

71.8% (n=234) had recently taken an overnight trip to a wine region participating in wine tasting and other activities. The wine regions visited are displayed in Table 3-34 with 1) Walla Walla (20.8%), 2) Yakima Valley (18.8%), and 3) Oregon (13.3%) being the top three destinations visited.

Table 3-34: Wine region visited on recent overnight trip

Wine region	#	%
Walla Walla	50	20.8
Yakima Valley including Yakima/Prosser/Zillah	45	18.8
Oregon	32	13.3
Napa Valley and/or Sonoma	24	10.0
Columbia Cascade	21	8.8
Red Mountain	16	6.7
Columbia Valley Area	8	3.3
Woodinville area	8	3.3
Southern California (i.e. Santa Ynez)	7	2.9
British Columbia	6	2.5
Spokane	4	1.7
Chile and Argentina	3	1.3

Table 3-34: Wine region visited on recent overnight trip

Wine region	#	%
Olympic Peninsula	3	1.3
New York and Other East Coast	2	0.8
France	2	0.8
New Zealand/Australia	2	0.8
Event Related	2	0.8
Eastern Washington (not specified)	1	0.4
California excluding Napa Valley and Sonoma	1	0.4
Italy	1	0.4
South Africa	1	0.4
Germany & Austria	1	0.4
Total	240	100.0

This recent visit was the primary purpose for the trip for 69.5% of the respondents (See Table 3-35). The “other” responses included visiting the area on business including 2 individuals whose business was wine related.

Table 3-35: The visit to this wine region was

	%	#
The primary purpose for the trip	162	69.5
Part of a larger trip	66	28.3
Other	5	2.1
Total	233	100.0

The number of persons traveling with the respondent tended to be *one other person* (48.9%) and less often but still a high portion was 2 to 3 persons (24.5%) (see Table 3-36).

Table 3-36: The number of persons traveling with the respondent on this trip

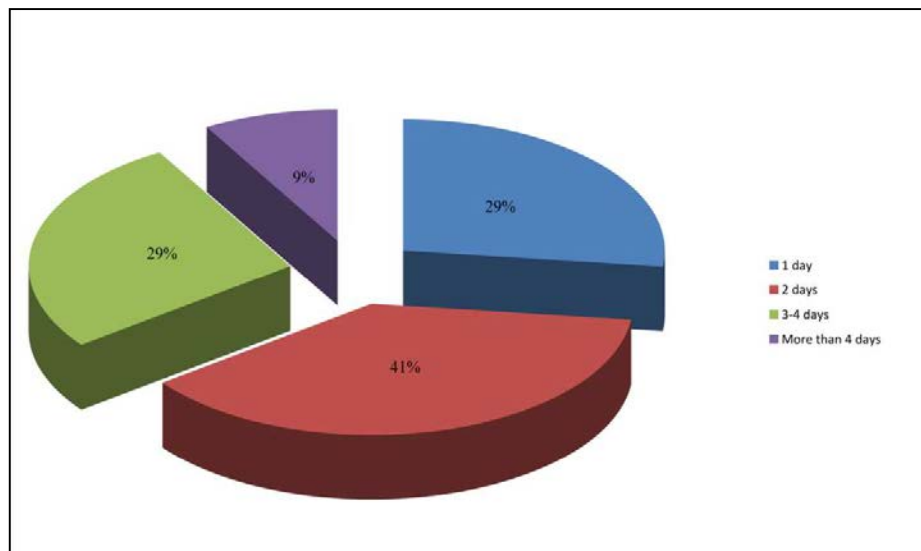
	#	%
I was alone	17	7.3
I had one other person with me	114	48.9
I had from 2 to 3 others with me	57	24.5
I had 4 to 6 others with me	23	9.9
Over 6 persons were traveling as a group	22	9.4
Total	233	100.0

The average number of nights spent away from home on their self identified trip was 4.20 (mean) nights (median=2, Mode=2). Table 3-37 displays the frequency of the responses. The trips were mostly 2 or more nights.

Table 3-37: Number of nights total spent away from home on this trip

	#	%
1 night	43	19.1
2 nights	89	39.6
3 to 4 nights	45	20.0
More than 4 nights	48	21.3
Total	225	100.0

The respondents spent anywhere from 1 day to 3 to 4 days tasting wine. Figure 3-4 indicates that “2 days is the most frequent number of days tasting wine. The average number of nights away from home was 4.2 nights and the number of days tasting wine was 2 days. It raises the question as to what the respondents’ activities were during the other 2 days. Or was this travel time?

**Figure 3-4 Number of Days Tasting Wine**

The respondents slept at *hotels or motels* (60.9%; Table 3-36), ate *2 meals per day in a restaurant* (49.8%; Table 3-38), purchased at least 1 case of wine (50.6%; Figure 3-5), and chose the region 1) because of an event (barrel tasting, release); 2) because of its proximity, convenience, “it was nearby,” 3) because they like the wine; 4) because of its location is beautiful (scenery, weather). (see Table 3-40).

Table 3-38: Accommodations used on this trip

Type of accommodation	#	%
Hotel/motel	156	60.9
Bed and Breakfast	23	9.0
Campground	11	4.3
Stayed with friends or family	39	15.2

Table 3-38: Accommodations used on this trip

Type of accommodation	#	%
Condominium, Vacation Rental, Timeshare	20	7.8
Winery or Vineyard Lodging	7	2.7
Total	256	100.0

Table 3-39: Number of meals eaten at a restaurant during this trip

	#	%
3 meals per day	41	17.7
2 meals per day	122	52.8
1 meal per day	49	21.2
3-5 meals for the whole trip	13	5.6
No restaurant meals....My meals were prepared and served at my campground or with friends	6	2.6
Total	231	100.0

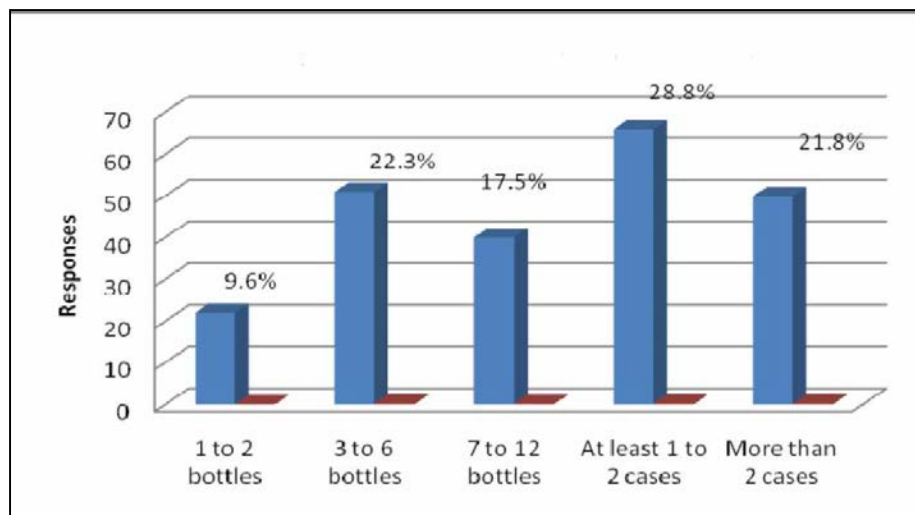


Figure 3-5. Amount of Wine Purchased on This Trip

Table 3-40: Reason for choosing this wine region

	#	%
An Event	33	12.6
Proximity, convenience, it was nearby	30	11.5
"Like the wine"	29	11.1
Best wine or region	27	10.3
Visiting family and friends	26	10.0
Location is beautiful	19	7.3
Curiosity, it is a new area for me	19	7.3

Table 3-40: Reason for choosing this wine region

	#	%
Return visit	17	6.5
Other activities and attractions	17	6.5
Business	12	4.6
Reputation	10	3.8
Fun	4	1.5
People at winery	4	1.5
Wine attraction	3	1.1
Word of mouth	3	1.1
Number of wineries	3	1.1
Vacation	2	0.8
Ad	2	0.8
Less well known	1	0.4
Total	261	100.0

This trip was taken during *regularly scheduled time off (e.g. weekend)* (41.7%) or *time off with pay* (31.5%) (see Table 3-41). If the respondents had not taken the trip, they would have *worked around the house* (34.5%) or *worked* (23.2%) (see Table 3-42). The alternative leisure activities they would have undertaken included 1) travel to another destination; 2) other recreation such as golf, biking, hiking or reading; or 3) visited family and friends (see Table 3-43).

Table 3-41: The trip was taken during.....

	#	%
Regularly scheduled time off (e.g. weekend)	98	41.7
Time off without pay	11	4.7
Time off with pay (vacation, sick, personal time)	74	31.5
I am retired	42	17.9
Business related travel	5	2.1
Self Employed time off	5	2.1
Total	235	100.0

Table 3-42: If you had not taken this trip, what would have likely done instead?

	#	%
I would have worked	51	23.2
I would have tasted wine somewhere else	23	10.5
I would have worked around the house	76	34.5
I would have participated in another leisure activity at home or nearby	39	17.7
I would have traveled elsewhere participating in other leisure activities	31	14.1

Table 3-42: If you had not taken this trip, what would have likely done instead?

	#	%
Total	220	100.0

Table 3-43: Alternative leisure activity

	#	%
Recreation activity (hiking, fishing, reading)	67	28.5
Dancing, movie, dinner, galleries(local attractions)	26	11.1
Travel	84	35.7
Visit family and friends	40	17.0
Beer/wine tasting or visits locally	18	7.7
Total	235	100.0

An AVA Vision

A description of the Red Mountain AVA Conceptual Plan was included (without Red Mountain being identified) and individuals were asked to indicate 1) whether they would visit; 2) whether they would visit more than 1 time; and 3) whether they would visit for longer than 1 day. They were asked to respond on a scale from 1=*Definitely Yes* to 10=*Definitely No*. The mean, median, and mode to each of these questions are shown in Table 3-44. The text on the survey did not indicate the specific AVA.

Imagine that you are choosing a destination for a weekend trip to Washington Wine Country. There is an area near the Tri-Cities in Washington which is a designated American Viticultural Area (AVA) and its hallmark is premium red wines. The area has 40 wineries linked together by a two-lane paved road bordered by vineyards. Interpretive paths and hiking and biking trails link the Wine and Artisan Village and wineries. The Village contains shops, a village green, picnicking and children's play areas, dining, lodging, interpretive displays, and meeting facilities.

The respondents indicated they would definitely visit (mean=1.64) but are less likely to visit more than 1 time (mean 2.34) or longer than 1 day (mean=2.40). The most prevalent responses to all three (3) questions, however, were "1" or "Definitely Yes".

Table 3-44: Response to scenario

	Mean	Median	Mode
Would you visit	1.64	1	1
Would you visit more than 1 time	2.34	1	1
Would you visit for longer than 1 day?	2.4	1	1

Then respondents were given a list of items and asked how important the items were to them when selecting a winery or wine region to visit. The response categories were 5=*Crucial*; 4=*Very important*; 3=*Important*; 2=*Somewhat important*; 1=*Not at all important*.

The four (4) most important items were 1) *knowledgeable winery staff*, 2) *desirable lodging options*, 3) *clear directional signage*, and 4) *wineries open daily with regular hours*. There is, however, a discrepancy between this list and the reasons the respondents provided on why they chose the wine region during a recent visit (Table 3-45).

Table 3-45: Importance when selecting a winery or winery region to visit	
	Mean
Knowledgeable winery staff	3.97
There are desirable lodging options	3.42
Has clear directional signage	3.41
Wineries are open daily with regular hours	3.38
Open year round	3.03
There are more than 15 wineries to visit.	2.83
The wineries are typically less crowded	2.73
Located in the countryside	2.59
There are opportunities to meet people	2.52
It is permitted to wander the vineyard	2.41
“Easy on and off” to a major highways	2.38
Not more than a 2 hour drive each	2.30
The area is new to me and my party	2.24
The wines have received at least 85 on the Wine Spectator/Robert Parker list	2.13
There are walking/bicycling paths between wineries	1.98
The wineries have other activities beyond tasting	1.98
There is an event or festival happening	1.93
Access to people with disabilities	1.68
Visited previously	1.66
Membership in a wine club in the area	1.33
Note: 86.9% to 92.0% responded	

VISITS AND VISITOR PROJECTIONS FOR RED MOUNTAIN AVA MASTER PLANNING PROCESS

Forecasting or making projections as to the number of visitors to a tourism destination, attraction, or facility is nebulous at best. What is tourism traffic going to be like this summer? Next year? Who is traveling? Where are they traveling? Will it be a good year? The tourism industry is plagued with unknowns and variables that impact the type of travel, number of travelers, or the destination choices of travelers. This is seen with such events as the 9/11 attacks on the World Trade Center and the Pentagon when many tourism operators saw a drastic decrease in travel (that is, fly-in destinations and attractions), but others, where visitors drive, saw a booming business. The price of gasoline continues to increase. As a result the cost of travel increases, which generally decreases the number of travelers and trips. The following information provided by the Associated Press has a different view for Summer 2007.

.....motorists are expected to use nearly 400 million gallons of gasoline from April to September, a 1.2 percent increase over the same months last year. "Demand for fuel is strong. We've not seen a reduction in fuel use."¹⁵

Impacts on a regional or local level may be felt as a nearby attraction might reduce the number of weekend events, thereby affecting the occupancy at area hotels and other businesses. The weather and construction during the summer season are factors. In the case of the Red Mountain AVA, if the weather and road conditions over Snoqualmie Pass are hazardous, visitation drops dramatically.

The purpose of this portion of the visitor studies was to describe the process and results for projecting the number of visits and visitors to the Red Mountain AVA from 2007 to 2025 based on the vision outlined in the Red Mountain AVA Conceptual Plan. By the year 2025, forty (40) wineries are proposed. A Wine Village will be developed containing restaurants, lodging, shops, and other amenities. The year 2015 is estimated as the year in which the wine village will be at full operation. Additional features, based upon the Conceptual Plan, will include trails, interpretation, and other attractions such as events, fairs and meetings.

Four (4) methods of data gathering were used to provide input into visitor studies for the Red Mountain AVA Master Planning process. Data and results from the following studies provided needed information and also supported assumptions:

1. Red Mountain Visitor Study (Current Visitors)
2. Research Analysis and Review
3. Winery Owner/Manager Interviews
4. Potential Winery Visitor Study

Two terms, visits and visitors are used throughout. Visits are described as an individual making a stop at a winery. An individual may stop at several wineries and it is considered a "visit" at each of the wineries; however, this is only one visitor. A visitor is an individual who travels to Red Mountain for wine tasting and other wine related activities (wine tourism).

Current Visits and Visitors

The current number of visitors and visits to Red Mountain was determined first. Interviews were conducted with winery owners or managers. They were asked to estimate the number of visits to their winery on a high season weekend day, a high season weekday, low season weekend day, and low season weekday. They also estimated the time period considered to be high season and low season. Finally, they provided comments on the increase in visitation during events. Table 3-46 displays the results of these interviews and also the resultant calculation of current visits and visitors. The manner of tracking the number of visits to tasting rooms varies. This is typical of the entire industry. From the data provided an average level of visitation was determined.

The following variables were taken into consideration during the analysis of current visits and also in the future projections; 1) number of days open/week and 2) the number of wineries visited/trip. The number of days tasting rooms are open varies; some wineries are open “when we are here” or “it is a big weekend” while others are open year-round, 7 days a week. An average of open days/week/winery (Open Days Average) for Red Mountain was calculated. Currently the Open Days Average for Red Mountain is 3.4 days/week. The typical number of wineries visited in one (1) day is estimated to be from 3 to 4 wineries (Winemakers’ Federation of Australia, 2007). The average of 3.5 wineries was used for breaking down visits to visitors and vice versa.

Table 3-46: Current Visitation 2007

	Average Daily Visits/Winery
*High season weekend 33 weeks high season	120
*High season weekday	40
*Low season weekend 19 weeks low season	45
*Low season weekday	10
Average number of visits/day or visits average	49.89
Visits/winery/year based upon # of open days/week	
Total visits/ winery open 7 days/week	17,192
Total visits/winery open 3 days/week	7,348
Total visits/winery open weekends only	4,898
Total visits/winery if open sporadically	2,449
Total visits for Red Mountain based upon current open days	88,313
Total visitors for Red Mountain with average 3.5 wineries/trip	25,232
Average number of visits /winery/year	8,831
Average number of visitors/winery/year	2,523
Number of visitors per winery /day	50
*Based upon interview data	

Visits Average is the average number of visits/winery/day year round taking into consideration seasonality. The total number of visits/year to Red Mountain is 88,313 visits. The total number of visitors to Red Mountain is 25,232 visitors/year.

Red Mountain AVA Future Projections for 2025

Current visitation figures and averages were used as a foundation for making future projections for the time intervals of 2010, 2015, 2020, and 2025. Layers were added to the current figures. Each layer is another variable affecting visitation levels. Each of the variables or layers is added to the previous layer in order to effectively create a progressively higher visitation.

The report of the U.S. Census Population Projections for the United States and specifically, Washington State constituted the first layer. The increase in the 21 years and older population in Washington State and the United States was used to provide a basic constant in the increase in visitors over time. The 21 years and older population in Washington State is predicted to increase 32.3% from 2005 to 2025. The 21 years and older population in the United States is expected to

increase by 20.8% from 2005 to 2025 ¹⁶(United States Census, 2006). 76.3% of the visitors to Red Mountain are from Washington State (see Visitor Study included above in this section). 23.7% of visitors to Red Mountain reside throughout the United States from Oregon to Florida. Table 3-46 illustrates the number of visitors projected from Washington State. The same calculations were used to estimate the visitors to Red Mountain living outside of Washington State.

17.4% of the population is considered to be Core Wine Drinkers. 17% of the population is considered to be Marginal Wine Drinkers (Wine Marketing Council, 2006). Based upon the data collected from visitors to Red Mountain in 2006, the demographics of Core Wine Drinkers are similar to the Red Mountain visitor demographic. An assumption was made that 17.4% of the population overall and in Washington State are Core Wine Drinkers and therefore most likely to visit Red Mountain. Marginal Wine Drinkers did not fit the demographic; however, ½ or 8.5% of Marginal Wine Drinkers were considered potential visitors. Using the current estimates as a base and the increasing size of the population, the number of visitors to Red Mountain from Washington State in 2025 would be 25,472 with no new wineries or development. The number of visitors from outside of Washington State in 2025 with no new wineries or development would be 7,227 for a total equaling 32,699.

Table 3-47: Projected visitors to Red Mountain from Washington State based upon the 21 years and older population increases estimated by the U.S. Census Bureau					
Washington State	July 1, 2005	Projection July 1, 2010	Projections July 1, 2015	Projections July 1, 2020	Projections July 1, 2025
21 years and older (U.S. Census)	4,440,648	4,770,246	5,125,332	5,480,188	5,875,594
Core Wine Drinkers 17.4%	772,673	830,023	891,808	953,553	1,022,353
Marginal Wine Drinkers 1/2 of 17% = 8.5%	377,455	405,471	435,653	465,816	499,425
Wine drinkers most likely to visit	1,150,128	1,235,494	1,327,461	1,419,369	1,521,779
Visitors to RM now from WA 76.3%	877,548	942,682	1,012,853	1,082,978	1,161,117
Estimate for 2005 projected visitors	19,252	20,677	22,227	23,761	25,472

Table 3-48 contains an estimate of visits and visitors from 2005 to 2025 with wineries increasing from 10 to 40 wineries as shown. The average/open days/week/winery remains constant at 3.4 days. The number of visitors increases at the same rate as the 21 years and older age group. The number of visits total increases to 32,675 by 2025. If, however, the number of visits/winery/day remains constant with today's average of 49.89, the number of visits in 2025 would be 352,850 visits, resulting in 100,814 visitors at that time (3.5 visits per trip).

Table 3-48: Current visitation as base, population projections, and number of wineries increasing						
		Projections				
		2005	2010	2015	2020	2025
Current Visitation and increase in 21 years and older population						
Number of Wineries		10	25	30	35	40
Total Red Mountain days open	3.4 days per week Open Average	1,770	4,420	5,304	6,188	7,072
# of visitors 49.89 visits 2007 estimate	Total visitors	25,232	26,994	28,874	30,681	32,675
# of visits total	Total Visits	88,312	94,479	101,062	107,385	114,364
# of wineries/ trip	Total visits/day	3.5	3.5	3.5	3.5	3.5

Current visits/winery/day continues and number of wineries increasing as shown above					
Average 49.894 visits/winery/day continues	88,312	220,781	264,937	309,093	353,250
# of visitors	25,232	63,080	75,696	88,312	100,928
Average # of visits/winery/year # per winery does not change	8,831				
# of visitors/winery/year	2,523				
# of visits/ winery/day	50				

The next layers include the following variables:

1. Increase in average number of days open/week, with the average increasing from 3.4 days/week currently to a high of 5.25 days/week in 2025
2. The average number of visits increases (Visits Average 51.89)

3. An estimated impact of the opening of additional wineries (2% per winery)
4. The impact of the Wine Village (beginning in 2015; a 10% increase in Visitors).

Each variable contributes some effect and numbers increase based upon this effect, building upon the current foundation and adding layers with each new variable.

An assumption is made that there will be an increase in the average open days/week/winery from 3.4 in 2007 to 4.6 days/week in 2010, and, finally, 5.25 days/week in 2025. Also assuming that the wineries will serve an average of 49.89 visitors/day, the number of visits in 2025 would be 648,622 visits/year and 185,321 visitors/year. The number of visits to a winery/year would be 16,216 and an average of 59 visitors/day/winery.

The number of average visits/day is expected to increase. The current Visits Average is 49.89 visits/winery/day. A new Visits Average was calculated based upon a 10% increase of average daily visits. The revised Visits Average is 51.858. The total number of visits/year becomes 674,154 in 2025.

Wineries will be opening over time. An assumption was made that there will be an additional number of visits based upon the attraction of a “new” winery. There is usually a bump of 10% based upon the literature due to new exhibits at zoos and new attractions or rides at amusement parks. To be conservative and provide a reasonable figure, 2% per winery is used. Table 3-49 displays the effects of this increase with the number of visits per year at 741,569.

Table 3-49: Increase of 2% sustainable visits per additional Winery

	Projections 2010	Projections 2015	Projections 2020	Projections 2025
Additional wineries	15	5	5	5
Increase of 2% visits for each additional winery	30%	10%	10%	10%
# of visits per year	403,144	498,335	581,390	741,569
# of visitors per year	115,184	142,381	166,112	211,877
Visits/winery/year	16,126	16,611	16,611	18,539
Visitors/winery/year	4,607	4,746	4,746	5,297
Visitors/winery/day	67	69	69	68

Another assumption was made that the Wine Village will result in additional visitors who might not be considered part of the target market (Core and Marginal Wine Drinkers). A 10% increase in visitors is further added to the projections beginning in 2015. The number of visitors to Red Mountain in 2025 would equal 23,065 visitors and 815,726 visits, resulting in 20,393 visits/winery/year and 75 visitors/winery/day. The average visits and visitors projected for 2025 at Red Mountain AVA are shown in Table 3-50.

Table 3-50: Number of visitors and visits to Red Mountain AVA

	Projections 2015	Projections 2020	Projections 2025
Total visits/year	548,168	639,529	815,726
# of visits per winery/year	18,272	18,272	20,393
# visitors/winery/year	5,221	5,221	5,827
# visits/winery/day	76	76	75
Note: Average number of winery visits per trip 3.5 visits/trip			

Table 3-51 highlights how many visits and visitors would be on Red Mountain if it were high season on a Saturday or Sunday and all wineries were open. The winery owner/managers indicated that event weekends generally resulted in a tenfold boost in visits over a typical high-season weekend. Tenfold and fivefold boosts were calculated. The average party size, 3.83, was determined from data collected during the Red Mountain Visitor Study in 2006. The assumption is that the average car would contain 3.83 passengers; therefore, the number of parties would estimate number of cars on Red Mountain. An estimate was made based upon the number of potential locations where parties (cars) could physically be (# wineries + 3) resulting in an average of 13 cars per location and 50.7 visitors per location.

Table 3-51: Visitors and visits for high season and events

	Season Saturday or Sunday Traffic		Event Weekend /day 10X		Event Weekend /day 5X	
If all wineries are open on a high season weekend	2020	2025	2020	2025	2020	2025
# of wineries	35	40	35	40	35	40
# visits/day on Red Mountain high season weekend	6,720	7,680	67,200	76,800	33,600	38,400
# of visitors/day on Red Mountain high weekend	1,920	High 2,194	19,200	21,940	9,600	10,971
Average total party size from survey 3.83						
Average number of parties/day high season weekend	503	573	5,030	5,730	2,507	2,865
Average # of parties/weekend during high season	1,005	1,146	10,060	11,460	5,013	5,729

Table 3-51: Visitors and visits for high season and events

	Season Saturday or Sunday Traffic		Event Weekend /day 10X		Event Weekend /day 5X	
# of parties/location based upon # wineries +3 locations	13	13	130	130	58	67
# of visitors at each location	50.7	51.0	510	510	223	255

OTHER PROJECTIONS (WHAT IFs)

Tables 3-52 and 3-53 provide the planning team and advisory and executive membership with “what ifs” based upon published research. High season daily activity is reported in each case. The following addresses each “what if” individually.

In conversation with winery owners/managers from other Washington AVAs, it was found that a winery averages approximately 1,500 visits/week during high season and 800 visits/week during low season. Using this data for Red Mountain, there would be 604 visitors/winery/day on a high season weekend day (see 52a). In order to further explore this phenomenon, a lower level of visitation than reported by the other AVA winery owners/managers was used - 1,000 visits/week during high season and 500 visits/week during low season. This resulted in a daily visitor figure of 397/winery during high season (see 52b). As the wine industry grows, the current levels of visitation would also increase. What if the current level of visitation (1,500 visits/week) at the other AVAs is increased by 10% every 5 years (see 52c) or is increased by 20% every 5 years (see 52d).

Table 3-52: Projections based upon current visitation at other AVAs in Washington

	High season weekend daily visits/winery	Red Mtn high season weekend daily visits	Red Mtn high season weekend daily visitors	High season weekend # parties/day; Party size 3.83	High weekend # of parties /day; Party size 2
Projections as calculated	192.0	7,680	2,194	573	1,097
52a: What if visits were at the same level as reported at other AVAs & 800/ per week during low season	604	24,174	6,907	1,803	3,453

52b: What if visits were 1,000/week during high season and 500/week during low season					
	397	15,879	4,537	1,185	2,268
52c: What if the current level of visitation at other AVAs increased by 10% every 5 years					
2025 # of visits	677	27,078	7,737	2,020	3,868
52d: What if the current level of visitation at other AVA increased by 20% every 5 years					
2025 # of visits	959	38,350	10,957	2,861	5,479

Table 3-53 draws from two (2) research studies completed by the Wine Marketing Council (2006) and Travel Industry Associates and Edge Research (2006): Consumer Tracking Study and Profile of Culinary Travelers, respectively.^{17 18} Data used initially about Core and Marginal Wine Drinkers is again drawn upon. Two (2) situations are examined: 1) what if the number of Core Wine Drinkers doubled by 2015 to 35% of the population then increased another 20% by 2025 (see 53a); and 2) what if Core Wine Drinkers increased 8% per year and Marginal Wine Drinkers decreased .5% per year (see 53b). In each of these situations, the impact of a cohort of individuals traveling into and out of the demographic seen of Red Mountain visitors is examined (2006).

Culinary tourism is growing and visitors to wine regions are considered culinary tourists. The Profile of Culinary Travelers was commissioned by a coalition of state wine commissions, convention and visitors bureaus, and state tourism organization in the United States. The research was broad, covering a large geographic area of wine tourism. Some important points from this research are:

Total number of individuals traveling for <i>Leisure Activities</i>	160,588,235
Total number of individuals very likely to travel for wine activities	64,235,294
64% of the Profile respondents rated Washington as having a great deal of opportunities for winery tours or tasting locally made wine	41,110,588
Washington is rated #3 and attracts 28.7% (behind Oregon and California)	
The total number of visitors attracted to Washington for wine tourism	11,798,739

Three (3) scenarios are explored, with responses shown in Table 3-53:

1. What if Red Mountain attracts 1/3 of Washington State wine visitor potential (see 53c)
2. What if Red Mountain attracts 1/4 of Washington State wine visitor potential (see 53d)
3. What if Red Mountain attracts 1/10 of Washington state wine visitor potential (see 53e).

Table 3-53 Projections based upon core and marginal wine drinkers (53a & 53b) and culinary wine tourism (53c).

Table 3-53 Projections based upon core and marginal wine drinkers(53a & 53b) and culinary wine tourism (53c)					
	High season weekend /daily visits /winery	Red Mtn high season weekend daily visits	Red Mtn High season weekend daily visitors	High season weekend day Parties/day; Party size 3.83	High season weekend day parties/day; Party size 2
53a: What if the # of core wine drinkers doubled by 2015 or at 35% level then increased another 20% by 2025	295	11,810	3,374	881	1,687
53b: What if core wine drinkers increased 8%/year and marginal wine drinkers decreased .5%/year In 2025	262	10,486	2,996	782	1,498
53c: What if Red Mountain could attract ____ of the potential of wine tourism potential					
Red Mountain attracts 1/3 of Washington State potential/year	262	10,486	2,996	782	1,498
Red Mountain attracts 1/4 of Washington State potential/year	197	7,872	2,249	587	1,125
Red Mountain attracts 1/10 of Washington State potential/year	79	3,149	900	235	450

Economic Multiplier

Economic impact of tourism in a particular region, with the inception of a new attraction or in the case of an event or festival is needed in order for a destination to be viable. A recent report which provides a good synopsis of the subject is authored by Glen Kreag.¹⁹ A number of methods are used to collect data and calculate the economic impact of tourism. A definitive “industry standard” or “number” does not exist as the factors influencing the amount visitors spend, indirect and induced impact, and the multiplier factor are limitless. Such things as geographic location, number and scope of attractions, number of tourism businesses, access to locally generated goods and services, and commitment to tourism development are just a few items that affect how tourism impacts a particular region. Numerous studies and research reports have documented the economic impact of travel and tourism at various locations and events.

In the case of the Red Mountain AVA and Benton County, the ability to generate visitor spending is affected by its location, number of tourism businesses, marketing, and number of events among other things. The following examples of visitor spending at other locations may provide a perspective in order to support the Red Mountain AVA Site Master Plan.

- Currently, Benton County sees an economic impact from tourism of \$222,200,000.00.²⁰
- In 2005, an economic impact study of the economic impact of Napa Valley visitors was completed. Napa Valley is a known wine region with an immense impact from tourism. According to this study, visitors who did not stay overnight within Napa County spent an average of \$146 per-day, while overnight visitors spent \$233 per-day. Average total daily spending of both categories is \$197.²¹
- The Walla Walla area has been used as a benchmark for the Red Mountain region.
- According to the Washington State Department of Commerce and Economic Development (2006), travel spending in Walla Walla County is \$71,600,000.00 per year from tourism and generates 6.2% of the total Washington State tourism spending.²²
- Festivals and events also generate local economic development. The Niagara region, although nearer a higher population than the AVA, attracts over 500,000 visitors to wine festivals in the area.²³

Figure 3-6 illustrates the increases due to the variables described in the projections.

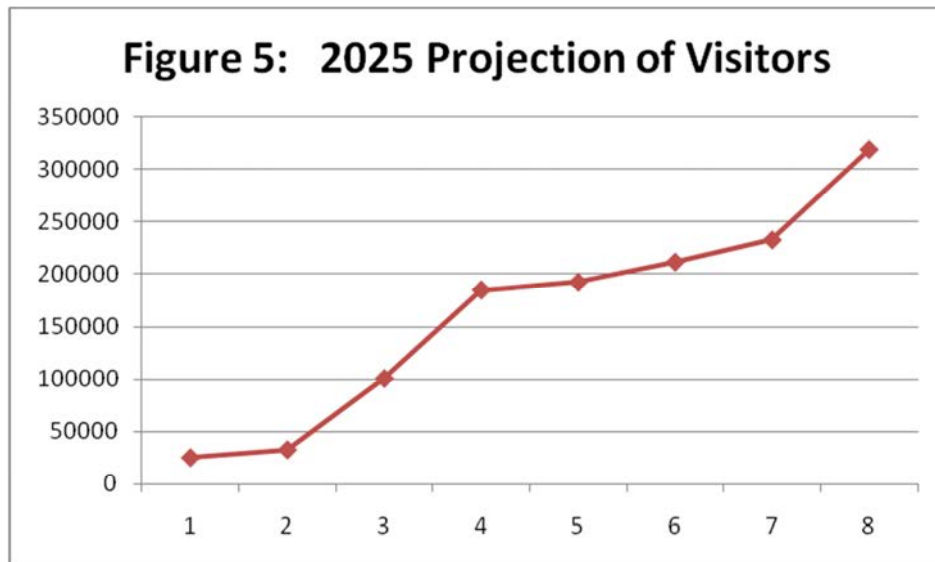


Figure 3-6. 2025 Projection of Visitors

Figure 3-5 Legend	
1 Current	2 Population increases
3 40 wineries Impact	4 Days open increases
5 Average visits increases	6 New winery effect
7 Wine Village	8 Market changes (core and marginal)

CONCLUSIONS AND ANALYSIS

Wine tourism is a growing phenomenon in the tourism industry. Wineries, tasting rooms, events and festivals, and other wine and vineyard attractions and activities are seen as an economic development tool, global, national, and regional marketing focus, a business strategy, an amenity for other tourism operators, and generally a positive force in the tourism environment. Red Mountain AVA, through the conceptual and master planning process, is embracing wine tourism and formulating a vision in order to maintain the agricultural nature of grape growing and wine production while providing facilities and amenities to facilitate tourism.

As of May 2007, there are 500 licensed wineries in Washington State. As wine tourism matures in Washington, the effect of such areas as Wahluke Slope, or new AVAs (Ancient Lakes, Lake Chelan) as competition for wine visitors is not known. It is significant that Red Mountain visitation does not seem to have been affected by the growth of wine tourism in the Columbia Cascade region. Red Mountain benefits from the increase in wine tourism in the Walla Walla area and even gains visitors because of it.

An important component of the Red Mountain AVA conceptual and master plan is to provide facilities and amenities attractive to wine tourists. The Visitor Studies, including the current visitor survey and potential visitor survey, reported that the current and potential visitors have similar demographic characteristics:

- Fairly evenly divided between males and females,
- Primarily between the ages of 51 to 60 years of age and to a lesser degree between the ages of 41 to 50 years old
- Travel either in parties of 3.83 (mean, current visitors) or 2.0 individuals (potential visitors)
- Have a household income over \$100,000.00
- Consume wine either “almost every day” or “about 1 or 2 times per week”
- Take trips specifically with the intention of visiting wineries and participating in other wine related activities
- Have visited a wide assortment of wine regions including Washington, Oregon, California and also South Africa, Chile, Italy, and France.

Additional information from the potential visitor survey includes the following:

- They have a bachelor’s degree or higher degree
- Do not belong to a winery wine club or 1 or 2 clubs
- Purchase wine when not traveling from grocery stores or specialty store
- Spend more on a bottle of wine when traveling than when they are at home
- Have future plans to take a longer trip and also day trips

Other findings are less clear as both the current visitors and potential visitors were asked whether they would visit, whether they would visit more than 1 time; and whether they would visit for longer than 1 day. They were asked to respond on a scale from 1=*Definitely Yes* to 10=*Definitely No*. Table 3-54 indicates the mean responses to these questions when given the conceptual plan scenario. It shows less inclination on the part of the Current Visitors to visit, make a return visit, and visit longer than 1 day.

Table 3-54: Current and potential visitors response to scenario		
	Current visitors	Potential visitors
Would you visit	2.25	1.64
Would you visit more than 1 time	2.62	2.34
Would you visit for longer than 1 day?	3.45	2.40

There is some inconsistency between the reasons for choosing a wine region and the actual reason for taking a trip. When the potential visitors were asked whether they had attended a wine event when they visited the wine regions given, fewer than 25% of the respondents had attended a wine event except when visiting Woodinville. When asked the reason for choosing a wine region for a recent trip, however, the top response was “for an event” followed by proximity and convenience, and finally “like the wine”. Also, Potential Visitors said that whether “there is an event or festival happening” is *Not at all Important* to *Somewhat Important*. Current Visitors enjoyed the wine, friendly servers or staff, and scenery or landscape most during their visit. The Current Visitors indicated that *prior experience with the wine, recommendation from a friend or family*, and distance to the area from home were the most frequent influencers. It seems that proximity may be a priority, which is supported by the literature and is used to determine visitation with such things as demand methods and Travel Cost Analysis.

Potential Visitors indicated that they needed 7.84 wineries to visit when deciding on a region, however, when asked the importance of having more than 15 wineries to choose from they indicated that 15 wineries was Important.

The Red Mountain AVA is seeking the visitor who will travel and stay in the area more than 1 day. Wineries are the core built attraction, but related facilities are important, including museums, visitor information and interpretive centers, wine villages and their services. The level of wine tourism development varies among wineries and wine regions. Many wineries offer visitors a tasting room with wine tasting only (Level 1). Other wineries have a full complement of amenities and attractions such as restaurants, meeting space, cooking classes, lodging, and so on (Level 3). Red Mountain wineries do not offer lodging, some offer space for events such as meeting or weddings, and others offer gifts and souvenirs. Potential Visitors indicated that having desirable lodging options was Important to Very Important. Comments received from Potential Visitors were supportive of the Red Mountain AVA concept, but there were some cautionary comments.

“I take family and friends to wineries that offer great food and/or music, maybe even dancing . . . in a fun atmosphere. Gone are the days when it’s

enough just to approach the winery's bar, and get a 1 ounce pour and a brief lecture."

"The "Village" sounds awful. Customer will be primarily vacationers, some with (ugh) children, interested in new experiences and drinking rather than tasting and buying. We would visit once to see if there were any new wineries whose products we would like."

"I can say that I will continue to visit [Yakima Valley] as long as the area stays rural, the wineries remain in the vineyards and it isn't crowded...."

"Of crucial importance: quality of dining options . . . I would certainly make more trips to central/eastern Washington if there were more fine dining options available in all price ranges."

"We look forward to our local area developing into the world-class AVAs that they are while maintaining their local and unique charm."

"I need kids' activities to be able to take my family on a wine-based trip. Bike riding helps, but my two boys (7 & 9) need some action – fishing, water park, go carts, something that allows them to have fun and burn juice."

"It would be a good idea to open up something similar to what Woodinville is doing. Having more of a "destination" . . . we can easily taste wine but also have great lodging and restaurants to choose from would make it more enticing to visit."

Several comments referred to tasting fees and are characterized by the following comments:

"As I almost buy at least one bottle of wine at all of the wineries we visit, I am concerned about tasting fees becoming more prevalent. If I buy a bottle of wine, I feel the tasting fee should be waived."

". . . the charge for tasting wine has become outrageous [in Napa Valley]. Many wineries do not even allow the tasting fee to be applied to purchase...."

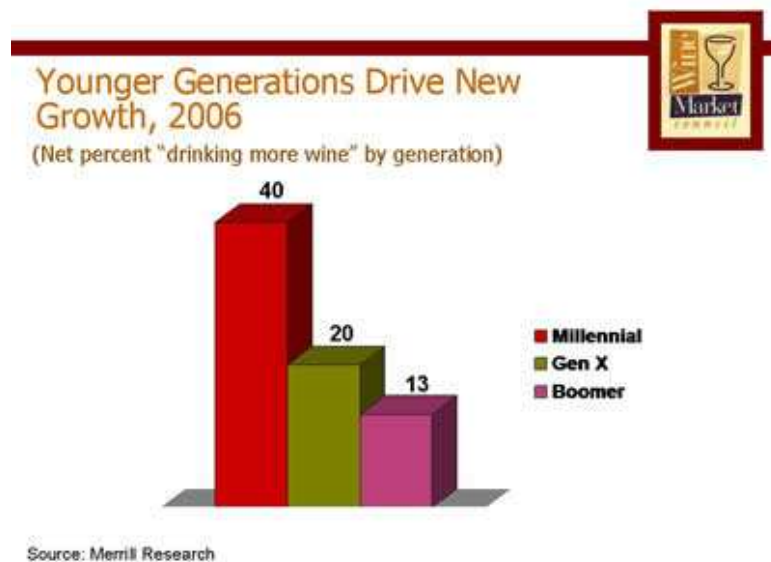
Few of the Potential Visitors belong to a winery wine club. Research has shown, however, that loyalty is important. Frequent visitors are more likely to make a post visit purchase. If they visited more than twice a year, they had made a purchase in the ensuing 6 to 9 months. If they purchased during their visit they are twice as likely to make a post visit purchase. Tourism does benefit the winery beyond the actual visit.

The demographic characteristics of both Current Visitors and Potential Visitors are similar to Core Wine Drinkers.²⁴ Core Wine Drinkers are expected to increase over time. Marginal Wine Drinkers (younger, lower income) will age and as their income increases and wine expertise improves this cohort will impact the wine industry.

In order to maintain a healthy market, the younger wine drinker and also newer wine drinkers should be a focus for marketing and tourism development as their wants and needs are different from their older counterpart. Younger wine tourists want more of an experience thus there is more dependence on amenities and regional appeal. Festivals and a more social convivial atmosphere would be a more attractive introduction to wine and a wine region. Wine tasting with friends and having a good time is more important than just tasting the wine; it is the experience. Baby Boomers (Core Wine Drinkers) are more satisfied with the standard wine and wine tasting experience. Generation Xers, 24 to 40 years old, need recognition of their individual needs as consumers and are more likely to develop a relationship with and brand loyalty to a winery with a well-trained and knowledgeable staff.^{25 26 27} In other words, winery wine club membership should increase but the focus on benefits of membership should address the needs of this younger demographic. The Wine Market Council has indicated that the younger generations are driving new growth (see Figure 3-7).

Many elements impact the tourism industry and the wine industry. The Visitor Studies for the Red Mountain AVA Master Planning Process has attempted to describe and quantify some of these elements: the visitor, both current and potential, and future visitation. Numerous variables, data points, and information were used to fully describe and quantify these elements. The results for the current visitor and potential visitor surveys have been reported. Future projections have been made and the process outlined. Lastly, the results have been supported by research published in various journals.

Figure 3-7. Younger Generations Drive New Growth.



4. DESIGN GUIDELINES

OVERVIEW

The future commercial development within the Red Mountain AVA should celebrate and reinforce the quality of viticulture and the resulting award-winning wine created from Red Mountain grapes. To realize this, it is proposed that design guidelines for commercial development be adopted for the commercial districts within the master plan area, and that within the Red Mountain Agricultural District (RMAD) the guidelines be applied to proposed commercial developments by a Design Review Committee. The Design Guidelines included in Appendix D present the administrative framework for the Red Mountain Agricultural District Design Review Committee (DRC), the two-step DRC project review process, and an objective set of guidelines that developers and their design team will use to design their projects and that the DRC will use to review the proposed projects.

The Design Guidelines are founded on the existing Red Mountain landscape setting, which has a distinctive rural character made up of buildings nestled in a sea of vineyards. Many of the existing commercial buildings are located away from roads, providing the opportunity to surround the buildings with vineyards. Most commercial buildings are of a quality that fits the character of Red Mountain. It is important that future commercial projects reflect the quality of the area (described in the Design Guidelines) and allow the working agricultural landscape to continue to dominate the scene.

A central focus on new commercial development in the AVA is that built elements at Red Mountain grow from the intrinsic qualities of the place and are of the highest quality. The Design Guidelines allow flexibility for individual creativity while fitting into the overall quality of Red Mountain.

Due to the subjective nature of design regulation standards, and the County's inability to administer and enforce them, the use of the Design Guidelines in this chapter will be encouraged on a voluntary basis by the Design Review Committee through a Red Mountain AVA Design Guidelines Handbook. Further discussion regarding this subject can be found in Chapter Seven, Next Steps.

A LIVING DOCUMENT

The Design Guidelines are a living document that will evolve over time in response to feedback from the developers and community stakeholders. The review process provides a framework allows refinement of the Design Guidelines. The Design Guidelines:

Foster a Sense of Place

Red Mountain's sense of place comes from the intrinsic qualities of its natural surroundings, the built environment, and the people who occupy Red Mountain as well as the stories that are written about the vineyards, the wine and the winemakers. All create a strong identity and foster

a perception of Red Mountain that is positive, authentic, and desirable. It is this perception that gives Red Mountain a strong sense of place for visitors as well as residents. Visitors and residents take better care of places that they become attached to and want to bring their friends to. Creating a place like no other in the world helps to sustain a high quality experience and high property values. Provide visual and physical connections to natural features and respect a vineyard fabric as the primary infill.

Use Existing Community's Amenities

With the exception of the Wine Village, neighboring communities offer lodging, restaurants and other amenities that do not need to be duplicated on Red Mountain. Preserve the land as much as possible for vineyards, wineries and related services. Development of areas outside the communities and lands adjacent to the AVA should be approached in collaboration to assure quality gateways and approaches to Red Mountain.

Promote Compact Build Forms and Subterranean Structures

Reduced development footprints leave more space for vineyards and other open space amenities. Subterranean structures take advantage of the earth's natural cooling properties and allow vertical development without excessive height.

Promote Clustered Projects, Park and Ride and a Variety of Transportation Choices

Wineries clustered around a single parking area, custom crush and condominium wineries reduce vehicle trips and potentially provide infrastructure savings. The parking areas should be well designed and environmentally sustainable, well shaded with trees and divided into smaller areas with clear and safe pedestrian connections. Park and ride areas would allow visitors to park their car and ride a bicycle, horse, or potential public transport (on peak event weekends) to various wineries.

Create and Administer Design Guidelines that Make Development Predictable and Cost Effective

Clear Design Guidelines promote development through increased understanding of design objectives and promote property owner investments. The Design Guidelines are clear and objective and offer sustainable ideas and alternatives. Administration of the Design Guidelines will be by a committee composed of design professionals and vineyard and winery owners.

Involve Stakeholders

The DRC project review process provides opportunities for neighbors to be involved in the project review. This collaboration between neighbors creates developments that fits better into its context and protects the land owner's investment.

Promote Environmental Sustainability

Promote a sustainable community where residents and businesses understand that not thinking sustainability can harm a neighbor or others in the community. Development should be designed to meet today's needs without scarifying the ability of future generations to meet their needs.

AVA LAND OWNER ACCEPTANCE OF THE DESIGN GUIDELINES CONCEPTS

Figure 4-1 presents the results of discussions that Red Mountain Estate Association (RMEA) members had with Red Mountain AVA vineyard and winery owners regarding their acceptance of the concept of design guidelines in assisting in managing the quality of commercial development within the Red Mountain AVA. Since the design guidelines do not cover single-family residential land uses, the owners of the existing residential properties were not contacted. The following results show that two thirds of the property owners contacted are in favor of the Design Guidelines.

- 67% (owners of 2,740 acres) are in favor of the Design Guidelines concept
- 28% (owners of 1,135 acres) are undecided or were unavailable for comment regarding the Design Guidelines concept
- 5% (owners of 205 acres) are opposed to the Design Guidelines concepts
- Figures exclude existing residential areas

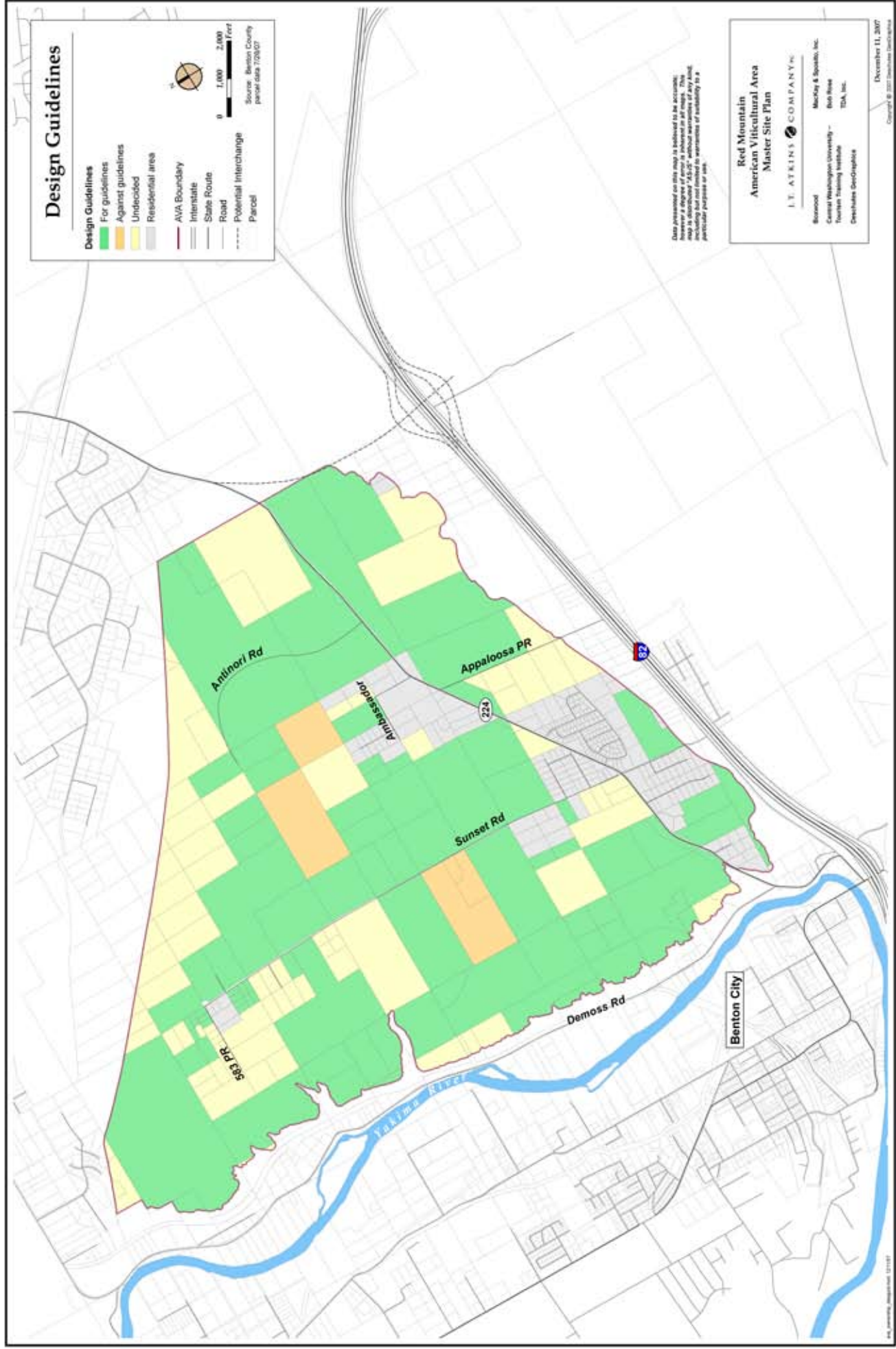


Figure 4-1. Landowner Support Levels for Design Guidelines

5. STEPS TOWARD SUSTAINABILITY

INTRODUCTION

One of the guiding principles established during the Conceptual Planning process is to “Create Red Mountain as a model of sustainable design, construction and operations,” including environmentally friendly agricultural practices. To incorporate this principle from an agricultural practices standpoint, the challenge is to develop an appropriate system for sustainability that tests and incorporates current and evolving management practices designed to produce a complex managed vineyard ecosystem.

The goal is to create a diverse managed vineyard ecosystem that enhances biological complexity while complementing and supporting vineyard operations, minimizes economic costs to the growers, and provides the Red Mountain visitor with an aesthetic, educational and environmentally satisfying experience unique to Red Mountain.

SETTING

The 4,600-acre Red Mountain AVA (the smallest in Washington) is located in one of the most challenging environments in North America for growing wine grapes.²⁸ Soils are generally sandy with areas of loam and light clay and are extremely alkaline (pH of 8.3-8.5). Organic content is very low (approximately 1.5%). All slopes are south facing with subtle variations. Reported summer temperatures are some of the hottest in the state, with marginal annual rainfall between November and March averaging 4 to 8 inches.

The intense heat, southern exposure, lack of moisture and alkaline soils provide a unique situation for cultivating grapes of intense flavor and character and creates an unmistakable and highly desirable “terroir.” These same qualities mean that many of the techniques and strategies directed toward environmentally friendly practices (sustainability) employed in other regions (ranging from California and Oregon to other parts of the Columbia and Yakima Valley AVA’s) may have limited or no utility for Red Mountain AVA operators. Thus, the conditions on Red Mountain will require strategies specific to the Red Mountain AVA.

SUSTAINABLE VITICULTURE IN WASHINGTON STATE

In 2003, the wine grape growing industry in Washington, led by the Washington Wine Industry Foundation (WWIF) and the Washington Wine Grape Growers Association (WWGGA) developed set of guidelines and checklists for viticulturists to assist them in incorporating sustainable principles into their vineyard operations. The website *VINEWISE, the Washington Guide to Sustainable Viticulture* (<http://www.vinewise.org>), grew from the original checklists as a way to address the entire spectrum of sustainability – the environment, viticulture practices and growers’ businesses.

The Vinewise website references a U.S. Congress definition of Sustainable Agriculture:²⁹

Sustainable agriculture is an integrated system of plant and animal production practices having site-specific applications that will, over the long term:

- Satisfy human food and fiber needs
- Enhance environmental quality and the natural resource base upon which the agricultural economy depends
- Make the most efficient use of non-renewable resources and on-farm resources
- Integrate, where appropriate, natural biological cycles and controls
- Sustain the economic viability of farm operations
- Enhance the quality of life for farmers and society as a whole

To put it simply: Sustainable agriculture is economically viable, socially supportive and ecologically sound.

(emphasis added)

As noted by Vinewise:

*Most Washington wine grape growers practice some form of sustainable viticulture, with pest management, soil and nutrient management and water management practiced most frequently. However, the scarcity of knowledge, education and resources is a challenge for Washington growers wanting to improve their sustainable practices.*³⁰

The congressional definition makes it clear that sustainability is not a cookie-cutter approach but instead is fine-grained and site-specific. The June 30, 2007, issue of Wine Spectator notes that relative to California and Oregon's "path to sustainability... Washington came out of the gate a bit later," and references the VINEWISE guidelines.³¹

Washington wine industry publications contain some instructive statements about the industry's evolving perspective on what constitutes sustainability:

The Washington wine grape industry recognizes that sustainability must be addressed on every level: environmental, economic, and social. Its commitment to:

- Environmental sustainability is evidenced in continuing efforts to reduce pesticide inputs, strong commitment to and growth in use of biological and cultural pest controls, and partnerships with Washington State University researchers and Extension personnel.

- Economic sustainability is self-evident; if a grower cannot make a profit over time, that grower cannot continue to participate in the industry.
- Social sustainability is addressed through a commitment to fair labor policies and to developing good relationships at the ag/urban interface.

Wine grapes hold a unique position in the agricultural community, as a commodity that is processed into a product with positive social connotations. Premium, super-premium, and ultra-premium wines are largely consumed by urban dwellers, further enhancing relations between agricultural producers and residents of metropolitan areas.³²

The Washington Wine Industry Foundation's website contains this observation:

The term "sustainable agriculture" is not easily understood, and in fact has been substituted with the term "environmentally enhanced agriculture." Washington wine grape growers have learned that their success is derived from an adherence to a philosophy of Integrated Pest Management (IPM) and use of other sustainable practices.

The growth of Washington's premiere wine industry will be accomplished through continued education on vineyard stewardship...and you will find some form of sustainable practices in every vineyard in the state. One focus of these programs is the economic management of pests with minimal environmental disruption...It is important to continually demonstrate and promote the success of these practices and low input approaches to the growers, industry leaders, decision-makers and the general public.³³

While the VINEWISE guidelines and checklist address many topics such as water management, soil management, and vineyard site selections, the topic of "whole farm ecosystems" is still under development:

The Whole Farm Ecosystems topic addresses sustainable practices that take the vineyard and surrounding ecosystem into consideration, such as the sunlight-nutrient cycle, the need for riparian areas, the function of vernal pools, local wildlife populations and species, water and air quality, erosion control and more. This topic looks at the vineyard as one piece in the whole ecosystem puzzle.³⁴

One result of the "late start" is that Washington growers (and specifically the estate owners on Red Mountain) have the opportunity to learn from what others have done and to evolve a set of sustainable practices specific to the conditions and requirements for the hostile desert environment of the Red Mountain AVA.

THE RED MOUNTAIN ECOSYSTEM

The installation of vineyards continues to change the current ecological state of Red Mountain. Even when the first vineyards were planted more than 30 years ago (Klipsun, Ciel de Cheval and Kiona), conditions on the mountain could not be characterized as “pristine.” Prior to the introduction of cattle, conditions on Red Mountain were probably similar to those found across the Yakima River on the Rattlesnake Mountain Arid Lands Reserve, hosting over 100 species of native plants and subject to periodic fire. The shrub-steppe landscape was dominated by sagebrush (*Artemisia tridentata*), blue bunch wheatgrass (*Pseudoroegneria spicata*) and Sandberg’s bluegrass (*Poa secunda*). Following cattle grazing and human-caused fire disturbance, cheat grass, residual bunchgrass and sage became dominant factors.

Conversations with DNR ecologists indicate that Red Mountain probably has had an extensive history of grazing, fire and other disruptions. It cannot be characterized as “undisturbed, yet it retains certain features of the native shrub steppe ecology. Nearby, the Rattlesnake Mountain Arid Lands Ecology Reserve and the newly designated Hanford Reach National Monument are permanently designated areas that protect high-quality examples of the undisturbed native shrub-steppe ecosystem. Red Mountain’s location means that native insects, birds and terrestrial wildlife are likely to continue to maintain a dynamic connection between these benchmark natural areas and the future landscape of the AVA. As more and more vineyards are developed, the ridge crest of the mountain and the ravines draining to the Yakima River will increasingly become important as an “island-like” feature connecting to these major biological reserves to the north and west. The utility of these connections in terms of beneficial predators and other positive (or potentially negative) consequences for vineyard operations will likely be the subject of ongoing research and evaluation for many years to come.

In the managed vineyard landscape, providing some of the habitat elements of the nearby undisturbed landscapes may improve the opportunities for these species to remain as part of the area’s ecological complexity and increase the opportunities for connectivity. It will also provide the visitor to the AVA an opportunity to experience and better understand the integration of high-quality agricultural production and conscientious stewardship with an on-the-ground reference to the landscape that makes the Red Mountain AVA unique.

APPLYING SUSTAINABLE PRINCIPLES ON RED MOUNTAIN

Inherent in the nature of the Red Mountain AVA is the transformation of a shrub-steppe sagebrush/bunchgrass ecosystem to a cultivated vineyard ecosystem. In the process of this shift to planted vineyards and in the management of the disrupted areas, operators have a range of choices, many of which are over-lapping, depending on desired end-state conditions of the vineyard and associated land uses:

- Allow invasive species (such as cheat grass) to occupy recently bared ground as a way to conserve soil moisture and minimize dust and soil erosion
- Plant various cover crops (such as crested wheat grass) and attractive non-native horticultural materials

- Re-vegetate with native and/or other low maintenance species

California vineyard operators have evidently embraced the idea of integrating the native landscape into their vineyard operations as part of a low impact/low input approach that combines neatly with Integrated Pest Management (IPM) strategies (see below).^{35 36} In large degree, Washington growers have not yet seized this opportunity.

Native plants provide certain inherent advantages over non-native species, including:

- Adapted to an Eastern. Washington climate of cold winters with some rain and hot, dry summers
- Require less water and generally less maintenance than non-natives once they are established
- Improve water quality by needing less fertilizer and no pesticides
- Provide shelter, food and pollination opportunities for native wildlife
- Resist native pests and diseases better than non-natives, and may provide habitat for native beneficial insects
- Resist wildfire
- Conserve resources and encourage a sense of stewardship

Long-time Red Mountain landowners speak of the beauty of the phlox, lupine, larkspur, balsam root and other flowering native plants during the spring season.

The long-range conceptual thinking that has been a hallmark of the Red Mountain planning process gives the Red Mountain AVA growers an opportunity to be “ahead of the curve” in developing strategies to manage their vineyards in a low-impact, low- input manner while producing superior grapes in a managed landscape of high biological complexity.

It is the intent of the estate owners on Red Mountain to work with researchers from Washington State University and other research institutions. They will develop pilot projects designed to evaluate cover cropping strategies, propagation and use of native vegetation, creation of beneficial insectaries, the utility and productivity of wildlife and riparian corridors, and maintenance and installation of other landscape-based approaches to enhance sustainable vineyard operations.

The commitment by the RMOA to support research and pilot projects on IPM, use of native plants, and other resource conservation efforts will transition the AVA from its present condition of a disturbed sagebrush and cheatgrass dominated ecosystem with vineyards to a new ecological balance in which current and yet-to-be planted vineyards are part of an integrated managed ecosystem that incorporates, where practical, native plants.

INTEGRATED PEST MANAGEMENT

IPM is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks... Washington has fairly limited pest problems and generally growers use fewer pesticides. Progress to improve this situation even further is slowly being made, but there is still a great deal researchers are learning about the biology and ecology of grape pests and their natural enemies in Washington State. This information is essential to the development of ecologically stable IPM programs.³⁷

Biological control of vineyard pest depends upon the “untapped resource” of the complex of beneficial insects and mites found in the natural landscape. WSU researcher David James (Prosser) states with confidence that:

*We have the endemic natural enemy fauna available to deal effectively with most of the current vineyard pest problems, [though] taxonomic, biological and ecological information on specific predators and parasitoids is either completely lacking or incomplete.. .. Once we know which biological agents are the most useful we can research their life histories, their ecology in and around vineyards and their biological efficacy. This information may then allow us to optimize their effectiveness by providing alternative hosts, refugia, overwintering sites, or minimizing disturbance through modification of cultural practices.*³⁸

WATER MANAGEMENT

*Water management is an area where Washington wine grape growers are continually making great strides. Water is an important element when examining sustainability practices. Water management is vital to vine growth and therefore impacts management costs, fruit quality, early fruit ripening, and susceptibility to pests. Wine grapes are one of the most efficient water users, allowing growers the rare opportunity to turn a minimal amount of water into a high value crop. A great deal of viticulture research to date has focused on irrigation techniques, indicating it is an obvious priority to the industry. Water conservation practices implemented by growers include irrigation scheduling, soil moisture monitoring and regulated deficit irrigation. Water management is more than conserving water during drought conditions; it's the most important quality management tool for Washington growers!*³⁹

CULTURAL PRACTICES IN THE VINEYARD

Red Mountain vineyard operators work in an extreme desert environment where they favor water conserving plants that provide habitat for beneficial insects and provide visual beauty to the landscape. They also strongly favor plantings and structures that support perching and nesting opportunities for predators (raptors and owls) that feed on grape-eating birds and destructive small mammals, particularly ground squirrels.

Cover Crops

Washington wine grape growers have been leaders in testing out various cover cropping strategies, a necessity for most eastern Washington vineyards to minimize soil loss and to conserve scarce soil moisture. Cover crops can also help encourage a diverse ecosystem within the vineyard. However, cover crops compete with vines for water. Depending on whether and when stress to the vine is desired, cover crop competition can be a problem. The cover crop must match the site and vine vigor and growers need to be aware of cover crop/vine interactions and how they change as the vine matures. The biggest challenge with cover cropping has been to find beneficial cover crops that work well within a drip irrigation system with no supplemental water during the season.

To determine the range of native plants suitable and desirable in the Red Mountain vineyard setting, a series of long-term research plots will be required. The desired outcome would be a recommended group of preferred native plants that could be self-sustaining as cover crops in vineyard alleys. An added benefit would be if those plants could also fix nitrogen, provide refugia and food source for beneficial insects, be used for commercial native seed production, and provide some visual complements to the orderly vineyard plantings.

A subset of the cover-cropping requirement is for in-row, inter-vine plantings of native vegetation that are self-sustaining in conjunction with drip irrigation for vines. Proper establishment of compatible native plants would diminish or eliminate costly interplant weeding (manual and/or mechanical) and associated damage to ground-level grape vine stems (“hoe-blight”).

An important research agenda is to investigate native leguminous species capable of providing the required nitrogen for Red Mountain vineyards at desired rates of 5-10 # of nitrogen/acre/year. Trial nitrogen-fixing (leguminous) species might include native Velvet and Silky Lupines (*lupinus leucophyllus* and *lupinus sericeus*), Western Prairie Clover (*Petalostemon ornatum*), and Lanceleaf Scurfpea (*Psoralea lanceolata*), Bighead Clover (*Trifolium macrocephalum*) and various Milkvetches (*spp.Astragalus*). If successful, this strategy would minimize fertilizer inputs, energy requirements for fertilizer application and eliminate water quality issues (if any).

Native and Complementary Plantings to Enhance Vineyard Productivity

Leafhoppers and cutworms can be considered 'key' pests of grapes in Washington. Their control may be enhanced by cultural strategies such as growing roses as an over-wintering habitat for leafhopper parasitoids and allowing broad-leaved weeds to serve as a food source for cutworms. Researcher David James' studies point to roses providing over-wintering resource for Anagrus wasps and an enhancement for biological control of grape leafhoppers.⁴⁰

An additional component of the vineyard management protocol would be testing of various native roses (*Spp. Rosaceae*) to determine their utility as insectaries for *Anagrus* wasps and to determine if providing habitat for these predators helps in the control of leafhoppers and cutworms.

Important shrubs of the Rose Family (Rosaceae) in the Intermountain region are distributed from blackbrush and salt desert shrub communities through-high elevation forests and meadows.

Many of these species are highly valued for the cover, fruits, and forage they provide for wildlife and livestock. ...Those that produce fragrant flowers or colorful fall foliage are prized for their ornamental value. Because of their browse value, antelope bitterbrush and several other rosaceous shrubs were among the first species to be used in wildlife habitat improvement efforts. Members of the bitterbrush- cliffrose complex are...seeing increased use in response to the growing emphasis on use of native species for wildland revegetation and low maintenance landscaping, community restoration issues, mitigation for endangered species, and a general shift to employ revegetation when deemed necessary to conserve or restore ecosystem diversity and functionality.⁴¹

The efficacy of rose plantings for biological control, in conjunction with other cultural practices will need to be rigorously evaluated through joint research projects of WSU entomologists and biologists.

Where appropriate for raptor and owl perching and nesting, it may also be appropriate to consider certain drought tolerant tree species which do not serve as focal points for grape-eating birds. See Appendix E for suggested plant lists.

Opportunities to Retain and/or Replace Native Landscape Elements

A general “rule of thumb” in agriculture is that 15-20% of the nominal acreage of the farm or vineyard will not be used for production because of roads, farm structures, unfarmable areas, etc. These areas provide a key opportunity to incorporate elements of the native ecosystem into vineyard operations. While not necessarily providing the continuity of the undisturbed landscape, the islands and nodes created will provide a mosaic of attractive elements.

For existing vineyards, the opportunity is to consider planting native species in areas currently either barren or occupied by invasive species. While there will be an upfront cost for seedlings and for initial irrigation to ensure survival, once established, these plantings should be self-sustaining and will require little or no supplemental irrigation.

For those ownerships where vineyards have not yet been established, the following measures should be considered as a palette of suggestions rather than explicit requirements

- When clearing land for vineyards, buildings and roads, site plans should designate areas of thin soil or steep slopes (>10%) (such as gullies, ravines, scab land areas, exposed rock and adjacent uncultivable ground) where sagebrush and other native vegetation will be left undisturbed as “wild-land islands.” Such areas should be visibly marked and reviewed with contactors before land clearing operations begin. (The new Kiona Tasting Room is a good demonstration of this outcome).
- Encourage protection and enhancement of existing native vegetation in drainage pathways (air and water) to retain connections with the Yakima River riparian area on the west side of Red Mountain.

- Before land leveling and ripping for vineyard installation, encourage the gathering of seed from native plants for propagation purposes (possibly in conjunction with the WSU-Richland Botany Department) and use these propagated materials on site for landscaping purposes. Where feasible, encourage salvage of on-site native plants for landscaping purposes.
- Encourage use of native plants and desert-adapted horticultural materials when designing landscaping for tasting rooms, production facilities, rights-of-way, visitor facilities, reservoirs, and other non-vineyard areas. Where feasible, during vineyard establishment, incorporate native grasses and wildflowers in vineyard alleys to complement permanent plantings as part of a Red Mountain vineyard ecosystem management approach. Appendix E, Design Guidelines, includes a list of recommended plant species.
- Conserve water resources by designing landscaping for production buildings, visitor facilities, tasting rooms, and public areas to minimize lawns and other high water input landscaping in favor of low maintenance native and desert (xeric) adapted vegetation. Use water conserving irrigation technologies.
- Design buildings and structures to provide nesting and perching opportunities for kestrels, hawks and other raptors, and nesting boxes for owls to increase the biological control of birds, rodents and other ground dwelling mammals that have deleterious effects in the vineyard.
- Provide shade for resting workers as well as for visitors in appropriate locations by encouraging the use of columnar (non-branching) trees (to minimize use by grape-eating birds) or by constructing arbors and shelters consistent with the design guidelines. Appendix E, Design Guidelines, includes a list of recommended plant species.

RED MOUNTAIN LEADS THE WAY

Taking a leadership role in this type of integrated landscape management provides the vineyard owners on Red Mountain with the opportunity to “brand” their vineyards not only for highest quality wine but also for a high level of environmental stewardship and innovation. Some of these ideas (as well as many others) noted above have been operationalized in voluntary associations created by vineyard owners in Walla Walla (VINEA) and Oregon (LIVE). While useful as a reference, conditions on Red Mountain are so extreme that many of the recommended protocols from these areas may prove to be inappropriate for the Red Mountain AVA.

The proposed Wine Village, in conjunction with present and future capital improvements in the numerous vineyard, production and tasting room facilities, will be an ideal area to both focus visitor’s attention on this aspect of the natural landscape and demonstrate how these plants can form an attractive display of seasonal flowers. The Wine Village will also provide an interpretive

opportunity to educate the visiting public about transformation of sagebrush shrub-steppe to productive vineyard ground.

Incorporating a high degree of environmental stewardship using the sustainable concepts outlined above and featuring native plants and ongoing research and evaluation with WSU (and other institutions) staff is a winning combination for the Red Mountain vineyard operator, the Red Mountain Estate Association and the environmentally conscious consumer.

6. ZONING

Implementing the future vision for the Red Mountain AVA presented in this plan will require a number of actions including additional opportunities for public review and comment. The actions include amending the Benton County Comprehensive Plan to include the Red Mountain AVA Master Site Plan as a sub-area plan, and adopting new zoning ordinances that implement the Red Mountain Master Site Plan vision.

It is important to provide a context as the above implementing actions are considered. Benton County's agricultural landscape plays a large role in the County's economy, customs, and culture. A majority of the approximately 1,000,000 acres that comprise the County are within agricultural land use. This strong commitment to agriculture is evidenced by the fact that approximately 60% (+600,000 acres) of the county land area, including about 3,600 acres of the 4,600-acre Red Mountain AVA, is zoned for commercial agriculture. Though the Red Mountain AVA lands that will be covered by the new draft zoning ordinances equal only approximately 0.2% of the acreage of Benton County, the area's soils, micro-climates, renowned wines, and visual prominence along the main travel corridor through Benton County provide unique opportunities as a wine growing region that enhance the economy and enrich the lives of Benton County residents.

As part of the Red Mountain Master Site Plan (RM MSP) planning effort, the Benton County Planning Department staff will develop a set of draft zoning ordinances intended to implement the Red Mountain Master Site Plan. The draft ordinances will be the land use controls for three distinct land areas (Figure 6-1) within the boundaries of the Red Mountain AVA Master Site Plan. These areas are listed below.

Red Mountain Agricultural District (RMAD) – The RMAD area is located north of SR 224 within the AVA boundary, and covers the same area on Red Mountain that the existing Growth Management Act (GMA) Agricultural District designation. The Red Mountain Agricultural District (RMAD) will be prepared to be consistent with the Red Mountain Master Site Plan, the current zoning code, and state law. When adopted, the new RMAD ordinance will replace the existing GMA Agricultural District Ordinance.

Master Planned Resort (MPR) this designation will be applied to an area identified in the Red Mountain Master Plan as the Wine Village, initially proposed to be located west of Sunset Road. In the event that the site identified is found unavailable or unsuitable for development, an alternative site for the Wine Village site will be located using the site selection criteria developed in Chapter 2, page 2-9.

The Wine Village development is proposed to be sited utilizing the Master Planned Resort (MPR) provisions under the Growth Management Act (GMA) in RCW 36.70.360. The RCW defines MPRs as “a self-contained and fully integrated planned unit development, in a setting of significant natural amenities, with a primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor or outdoor recreation facilities”. While it is noted that some uses may not be possible as originally

proposed, the MPR's designation offers compatibility with the County's agricultural district. Implementation of the Master Planned Resort provisions of the GMA will allow the provision of municipal water and other necessary services to be extended outside an urban growth area to a Wine Village designation in the RM MSP area.

Tourist Serving Area (TSA). This area will include an appropriately sized "site planned" area, developed specifically to provide tourist services and amenities near a possible future Red Mountain Interchange. The proposed interchange area is along I-82 near the south east corner of the Red Mountain AVA and shown in Figure 6-1. A potential alignment route north of I-82 that will connect to SR 224 will allow access and provide a "Gateway" opportunity to the Red Mountain AVA.

Lands that are not designated for Agriculture RMAD, or Wine Village developed through the MPR provisions, and found within the boundary of the Red Mountain Master Plan, are designated Rural Lands Five Acre (RL-5). Residential density is one dwelling unit per 5 acres within the RL-5 designation. The purpose, uses, and development regulations within the RL-5 zoning district are the same inside the Red Mountain Master Plan area as they are for other areas designated RL-5 within the County.

The following is a partial list of uses that would be allowed outright, by administrative review, or by a conditional use permit, within the RL-5 zoning district: horticulture, aquaculture, agriculture, agricultural buildings and accessory uses, wineries, nurseries, agricultural markets, Bed and Breakfasts, ag-related industry for processing ag products, home occupations, and small businesses that are consistent with and characteristic of the rural lifestyle. Feedlots, slaughterhouses, commercial poultry farms, and confined animal feeding operations (CAFOs) would not be allowed.

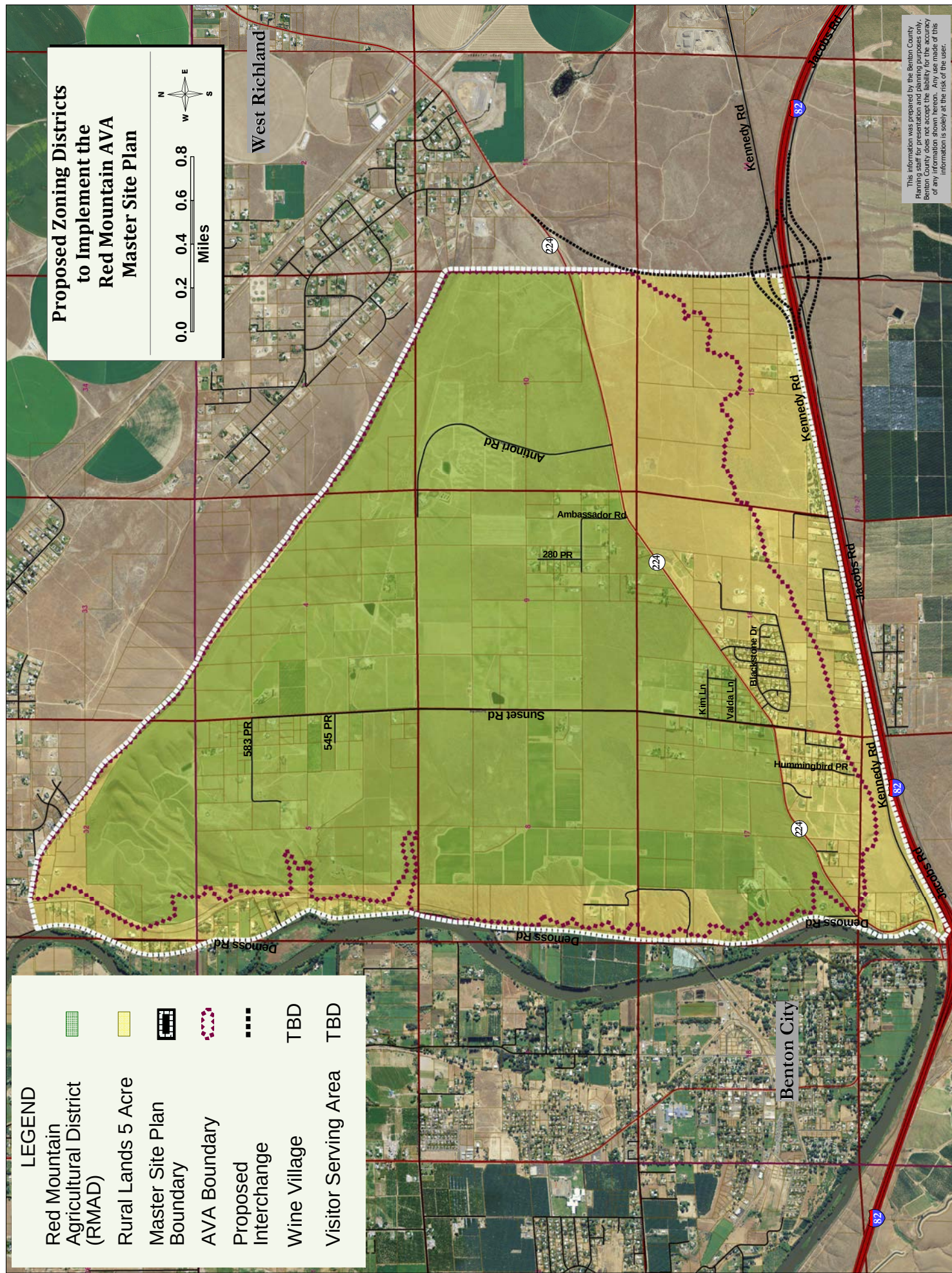


Figure 6-1. Proposed Zoning Districts to Implement the Red Mountain AVA Master Site Plan

7. NEXT STEPS

INTRODUCTION

During the spring of 2012, Benton County retained J.T. Atkins & Company PC to review and update the status of the “Next Steps” action elements and update the Master Site Plan map and the Ownership map (using ownership and 2011 aerial photographic information and ownership information provided by the County) that were presented in the Red Mountain AVA Master Site Plan (RM MSP), dated December 2007. The information shown in the “Next Steps” Chapter provides the findings of the review of the 2007 Red Mountain AVA Master Site Plan document.

RED MOUNTAIN MASTER SITE PLAN FINDINGS

Several of the concepts presented in the 2007 RM MSP are not allowed under the present Benton County Agricultural Zoning and Washington GMA land use regulations. The RM MSP presented a vision of the Red Mountain AVA including a mix of land uses supporting a sustainable agricultural district and conserving the intrinsic qualities and natural resources of the Red Mountain AVA.

A range of changes have occurred since the 2007 RM MSP was developed that may impact several of the 2007 RM MSP recommendations. The County Office of Sustainable Development and Planning Department staff and Red Mountain AVA Alliance (Alliance) members should consider modifications to the 2007 RM MSP document maps including the following:

- Revise the “Mixed Use Area” shown on the 2007 RM MSP map to exclude areas within the AVA boundary that are potential areas for vineyards and wineries. In addition, a large part of the mixed use area boundary is within the KID irrigation district and should be considered for agriculture and vineyard use. The “Mixed Use Area” should be designated as a Tourist Serving Area and reduced to an appropriate size to allow for planning for a future tourist services near the possible future Red Mountain interchange area.
- Revise the proposed zoning map shown in the 2007 RM MSP to reflect the current zoning map adopted by the County in September 2011.
- The Alliance should evaluate developing a Design Handbook to be used by winery and other land use developers within the AVA on a voluntary basis for their projects. The handbook could incorporate the elements of the RM MSP Design Guidelines that could not be incorporated in the zoning ordinances. The Administration section of the 2007 RM MSP in Chapter 4 should be modified to describe how this process will work.
- Alliance members should provide comments on proposed projects within the AVA. The Alliance should use the SEPA mailing list process to be notified as projects requiring SEPA review are received by the County Planning Department. This will allow the

Alliance to monitor and provide comments on the projects as they proceed through the County Planning Department or the Planning Commission review and Board approval processes.

RED MOUNTAIN MASTER SITE PLAN – VISION & GUIDING PRINCIPLES

The 2007 RM MSP presented a Vision and set of Guiding Principles that were identified during the planning process to assist in decision making regarding Red Mountain AVA's future development. As part of this updating process the Alliance has reviewed and confirmed the RM MSP Vision and Guiding Principles presented below.

THE RED MOUNTAIN AVA VISION

The Red Mountain AVA vision is inspired by the beauty of the place and the globally competitive wines created at Red Mountain

- Future AVA visitors will be greeted by a sea of vineyards
- Create Red Mountain as a model of sustainable design, construction and operations
- The Wine Village forms the heart of visitor's Red Mountain experience
- The Wine Village architecture and landscape elements will respect Red Mountain's rural character and reinforce the overall quality of the new development occurring within the AVA
- The AVA will provide a wealth of interpretation opportunities for the visitor

THE RED MOUNTAIN GUIDING PRINCIPLES

Make Red Mountain the place all wine lovers want to visit.

- Make and sell highest quality wines
- Attract grape growers and vintners who focus on high-quality wines
- Increase Red Mountain AVA visibility
- Provide elements that support wine production and sale

Protect Red Mountain AVA character.

- Preserve the quality soils to grow grapes
- Respect the area's rural scale and character
- Encourage sustainable development and operation
- Incorporate a high standard of design and materials
- Respect private property rights

Provide high-quality visitor amenities and experiences.

- Provide lodging and dining opportunities of appropriate quality and scale
- Develop compatible recreation amenities
- Expand visitor interpretation and education opportunities

Support local economies.

- Focus a majority of the AVA-generated visitor facility opportunities in Benton City, West Richland and the Tri-Cities

Create Red Mountain as a model of sustainable design, construction and operation.

- Encourage future development to incorporate sustainable design principles in the design, construction and operation of the facilities
- Preserve and restore native shrub-steppe vegetation where such preservation and restoration complements vineyard and winery operations

VINEYARDS AT RED MOUNTAIN

Since the 2007 RM MSP was developed additional vineyards has been planted and wineries built within the AVA. The approximate acreage in vineyards and wineries is presented below:

2007 – 1,080 acres and 14 wineries

2012 – 1,300 acres and 13 wineries

RED MOUNTAIN AVA ALLIANCE

The Red Mountain Estates Association was formed by a small number of growers to create a master plan for the Red Mountain AVA. Following completion of the RM MSP in December 2007, Association members decided that, in order to implement the RM MSP and to pursue related goals including marketing the AVA to a worldwide audience, the Association needed a more broadly based organization. The growers created a new group, the Red Mountain AVA Alliance (the Alliance), in order to attract additional members including more residents, growers and wineries associated with the Red Mountain AVA. The Alliance is now in its fifth year and well under way to achieving its broader goals, with the support of a large and enthusiastic membership. The Alliance meets monthly and elects Alliance officers at the annual meeting.

NEXT STEPS - REVIEW MEETING

The Alliance held a meeting on June 6, 2012 to review and update the status of the Next Steps for the RM MSP. Meeting participants included Alliance members, Benton County Commissioner and staff, KID representatives, interested property owners, and the consultant.

NEXT STEPS STATUS

The Red Mountain AVA Master Site Plan is the result of a two-year planning process during which the consultant team worked closely with an Advisory Team, Benton County staff, AVA property owners and the public. The plan presents recommendations for the future of the Red Mountain AVA. This plan, once endorsed by the County Commissioners, provides the foundation for the next steps needed to implement the Red Mountain AVA Master Site Plan vision. Those steps include:

REPORT TO COUNTY COMMISSIONERS

The 2007 RM MSP work scope included the requirement that the consultant team assist the Office of Sustainable Development in presenting the 2007 RM MSP (including all recommendations and work products) to the Board of Benton County Commissioners to conclude the planning project and close the contract.

Status

- A presentation to the Board of Benton County Commissioners occurred during December 2007. The RM MSP has not been adopted by the Board of Benton County Commissioners.
- A presentation of this Next Steps Status Update to the Board of Benton County Commissioners will be scheduled for late summer 2012.

RED MOUNTAIN AVA MASTER SITE PLAN ADOPTION

Status

This process has not been started at this time. The following steps will occur as part of the adoption process:

- County Planning Department staff has reviewed the 2007 RM MSP and have recommended edits to update the 2007 RM MSP to reflect current zoning within the red Mountain AVA and to be consistent with GMA land use regulations.
- Benton County Planning Commission will review the RM MSP when this update has been completed. This review is anticipated during the fall of 2012.
- The Planning Commission will hold its RM MSP hearings and make a recommendation to the Board of Benton County Commissioners for its adoption. The recommendation status and date are to be determined.
- The Board of Benton County Commissioners to consider adoption of the RM MSP. The adoption status and date are to be determined.

Actions

- The Alliance should attend hearings held by the County Planning Commission and Board of Benton County Commissioners during this process.
- Visibility/Interaction - It is important that the Benton County Planning Department, Planning Commission and Board of Benton County Commissioners know how important adoption of the RM MSP is to the Alliance and other Red Mountain property owners.
- Completion of necessary information (including a SEPA preparation and review of the RM MSP) is required prior to RM MSP adoption by the Board of Benton County Commissioners.

REVIEW UNDER THE WASHINGTON STATE ENVIRONMENTAL POLICY ACT (SEPA)

Initial plans were to develop (contingent on funding) an environmental impact statement (EIS) that addresses environmental issues identified during the 2007 RM MSP process. If an EIS is prepared for the RM MSP, the SEPA process will be included in a public meeting focusing on issue identification (scoping) as well as additional public meetings and an agency review and comment process.

An environmental review must be completed prior to the County Board of Commissions adoption of the RM MSP, which could take the form of this EIS. A preliminary estimate (December 2007) for developing the EIS was approximately \$75,000 -\$100,000. At the time the Kennewick Irrigation District pledged assistance to the County for funding for the EIS. In lieu of the EIS process, which requires environmental review of each action proposed on a case by case basis, County Staff proposes a State Environmental Policy Act (SEPA) Checklist review for the Final Red Mountain Master Site Plan as a non-project SEPA which reviews the environmental impacts of the RM MSP document itself. This checklist would accompany the subarea plan amendment application and be prepared by County Planning Staff.

Status

- The County Planning Department has determined that State Environmental Policy Act (SEPA) checklist must be prepared for the Final Red Mountain Master Site Plan.
- The County Planning Department has determined that an Environmental Impact Statement (EIS) may be prepared for each action or project presented in the RM MSP document on a case by case basis as projects are proposed.

Actions

- County Planning Department staff to prepare a SEPA checklist for the Final Red Mountain Master Site Plan.

RED MOUNTAIN AVA MASTER SITE PLAN ZONING

The RM MSP recommended several preliminary zoning ordinances and an ordinance for implementing a Design Review Process (for commercial developments within the Red Mountain Agricultural District) and Design Guidelines for development within the AVA (developed by the Alliance and County Planning staff as part of the RM MSP planning process) be reviewed by the Benton County Planning Commission, other government agencies, utility providers and the public. Public meetings and hearings at the Planning Commission and the Board of Benton County Commissioners will be part of the review process for the ordinances. The Board of Benton County Commissioners is the approving authority for ordinances.

Status

- A draft Red Mountain Agriculture Ordinance is being completed by County Planning staff with oversight by appointed Alliance committee members. A draft document will be reviewed by County PA legal staff before the document is circulated for public review and comments. It is anticipated that the draft ordinance will be reviewed by PA legal staff review during the fall of 2012. The draft Red Mountain Agricultural District Ordinance will be written to be consistent with the draft RM MSP, current zoning code, and state law and replace the draft ordinances presented in the 2007 RM MSP.
- The County Planning Department staff has reviewed the list of potential commercial and tourist serving uses proposed within the Wine Village. Staff believes these uses can be located through the Master Planned Resort (RCW 36.70A.360) provisions.
- County Planning Department staff is developing a draft Master Planned Resort Ordinance for use as an overlay district for use on Red Mountain and other areas within Benton County.
- Lands not designated as agriculture and south of SR 224 but within the RM MSP study area boundary have been zoned Rural Lands – Five Acre (RL-5) during the 2011 Zoning Update process. The Proposed Zoning Districts Map (figure 6-1) in the 2007 RM MSP should be updated to reflect the RL-5 zoning areas.

Actions

- The Alliance should meet with the County Planning Department to discuss their Draft Agricultural Zoning Ordinance issues and comments.

The goal is to develop a Red Mountain Agricultural Zoning Ordinance that:

- Meets Red Mountain Alliance goals for the Agricultural Zone while being consistent with the requirements of the State's Growth Management Act (GMA).
- Achieves goals for ancillary development while protecting agricultural interests.
- Creates zoning ordinances that are enforceable.
- Following the above Alliance and County Planning Department meeting and refinement of the Draft Ordinance, the County Planning Department will begin the Draft Red Mountain Agricultural Zoning Ordinance public review process, which follows the

typical procedure for public participation, including Planning Commission review and recommendations and adoption by the Board of Benton County Commissioners.

It is critical that progress occur on this element as soon as possible since the Red Mountain-specific language has been deleted from the existing County Agricultural Zoning Ordinance.

BENTON COUNTY AGRICULTURAL ZONING ORDINANCE

The Benton County Planning Department is in the process of drafting a new Agricultural Zoning Ordinance.

Status

- County Planning Department staff has reviewed the Growth Management Hearings Board decisions and case law rulings regarding the development of agricultural lands in Washington State. County Planning Department staff has also reviewed the 2008 draft zoning ordinance proposed for the Red Mountain GMA Agriculture District and determined that due to its inconsistency with the new zoning format, the inclusion of design standards, changes in the Growth Management statutes that created provisions allowing farmers some limited non-agricultural accessory uses that support, promote or sustain agricultural operations, created a need to develop a modified draft.
- County Planning Department staff is in the process of preparing a draft Red Mountain Agriculture District Ordinance using the recently adopted zoning ordinance format and modifying the existing Growth Management Act (GMA) Agriculture District by incorporating the compatible Red Mountain Master Site Plan uses and the 2008 draft Red Mountain Agriculture District uses and setbacks, and removing those uses from the existing GMA draft that are detrimental to, and incompatible with the RM MSP. The preparation of the draft is being completed with oversight by appointed Alliance committee members. A draft document will be reviewed by County PA legal staff before a public document is circulated for review and public comments. The draft ordinance for PA legal staff review is anticipated by October 2012.
- Although there are no RCWs adopted specifically for lighting and light pollution, many jurisdictions have Lighting Ordinances in place to regulate light nuisances. During Benton County's 2011 Zoning Update Program, a lighting ordinance was drafted, but put on hold pending the Red Mountain zoning process, to ensure that the ordinance provides the best regulatory procedures to benefit Red Mountain and meets the needs of the entire County.

Actions

- The Alliance should continue to provide comments regarding the Agricultural Zoning Ordinance during the public review process.
- The Alliance should review the County's draft lighting ordinance and work with County Planning Department staff to achieve implementation of the lighting ordinance.

DESIGN GUIDELINES

The 2007 RM MSP developed Design Guidelines to guide the character of future project development within the Red Mountain AVA. The recommendations included the County developing an ordinance establishing a Design Review Process (to be administered by the Alliance) for review and approval by the Board of Benton County Commissioners. It was also recommended that the Board of Benton County Commissioners identify and appoint Design Review Committee (DRC) members. To facilitate that process, the Alliance could provide a list of nominees to the Board of Benton County Commissioners for their review, selection and approval.

Status

- Benton County Planning department does not have adequate staffing to administer, regulate or enforce the proposed design guidelines as presented in the 2007 RM MSP.
- The County Planning Department will notify the Alliance of projects within the AVA so that the Alliance can review and comment on the projects through the existing County Planning Department and County Planning Commission review process. The Alliance could use the 2007 RM MSP Design Guidelines as the review format.
- The Alliance Board voted for a voluntary non-binding Red Mountain AVA project review and comment approach in December 2008. To date no projects have been reviewed by the Alliance.

Actions

- The Design Guidelines and project review process could be initiated through the following process:

The Alliance should meet with the County Planning Department to discuss how an AVA Design Guidelines Handbook could be implemented on a voluntary basis.

If the Alliance (or other appropriate group) were to commit to administering a Design Review Committee (DRC), then the Alliance's established procedures and processes would set forth the DRC's membership, authorities, procedures, responsibilities and limitations

The Design Guidelines would cover only proposed commercial projects. Single family residences are not subject to the Design Guidelines review.

The Design Guidelines may be used by the Alliance (or other appropriate group) to develop a Handbook for use by winery and other developers within the AVA on a voluntary basis. The Handbook could incorporate the elements of the 2007 RM MSP Design Guidelines that could not be incorporated in the zoning ordinances.

BENTON COUNTY COMPREHENSIVE PLAN

The 2007 RM MSP recommended that in a public process, prescribed by State planning law and the Benton County Code, the RM MSP will be adopted as a Sub-Area Plan to the Benton County Comprehensive Plan and ultimately adopted by the Board of Benton County Commissioners. The amendment process will involve agency and public review and comment.

Status

- During the 2011 Comprehensive Plan Amendment process Sub-Area Plan language was added to the Benton County Comprehensive Plan. The amendment explains the function and process of Sub-Area plans and is the nexus between sub-area plans and the Comprehensive Plan
- The Sub-Area Plan amendment process begins with planning staff review of the Red Mountain AVA Master Site Plan (RM MSP) for consistency with the County's Comprehensive Plan and State planning law. Staff will prepare a staff report and amending language for the Comprehensive Plan and schedule a hearing before the Planning Commission, where the RM MSP and the planning staff report will be presented. The Planning Commission will consider the staff report information and the public testimony received to make a recommendation to the Board of Benton County Commissioners. A second hearing will be held before the Board of Commissioners to review the Planning Commission's recommendation, take further testimony and make a final decision. The Board of Commissioners will approve, modify or deny the plan. If approved, the RM MSP is adopted by reference in the County's Comprehensive Plan as a Sub-area Plan and text describing the RM MSP is added to provide a nexus between the RMMSP and the Comprehensive Plan.

Actions

- The Alliance should work with the County Planning Department to ensure that the Red Mountain vision is reflected in the County Comprehensive Plan.
- The Alliance should attend hearings with the County Planning Commission and Board of Commissioners to support inclusion by reference of the RM MSP recommendations.

URBAN GROWTH AREA BOUNDARY CHANGES

During 2009 two urban growth area (UGA) boundary change requests were proposed by cities adjacent to the Red Mountain AVA that could have impacted the AVA.

Status

Benton City had proposed an extension of its UGA boundary to the western edge of the Rural Lands Five designation (formerly "Mixed Use Area") which was approved by the Board of County Commissioners. The decision by Benton County was appealed to the Eastern Washington Growth Management Hearings Board and remanded back to the

County for non-compliance. After discussions between County, City, and petitioners, in an attempt to resolve the appeal, the city opted to remove the land from its UGA and the County rescinded the previously adopted ordinances to settle the appeal and achieve compliance with the court order. West Richland had proposed an extension of its UGA into the eastern portion of the Rural Lands Five designation (formerly “Mixed Use Area”). The West Richland proposal was appealed to, and later denied by the Eastern Washington Growth Management Hearings Board.

Actions

- The Alliance should review all future requests for UGA boundary changes that fall within the Red Mountain AVA Master Plan boundary to assure that UGA boundaries do not include land within the Red Mountain AVA.

INFRASTRUCTURE

The infrastructure analysis developed as part of the 2007 RM MSP identified the following four steps to advance the infrastructure and utility service in the study area:

If necessary and desirable, the County could designate and implement the Master Planned Resort (MPR) provisions of the Growth Management Act in order to provide municipal water and service to the Wine Village designation presented in the RM MSP. The GMA provisions that allow municipal service extensions into MPR’s require that the resort must be self-contained and be a fully integrated planned unit development with a primary focus on destination resort facilities with services limited to meeting the needs of the master planned resort.

Status

Wine Village - Since the Wine Village site has not been selected. No action has occurred.
Visitor Serving Area (formerly the Mixed Use Area) – No action has occurred.

Action

None identified at this time. The Alliance should monitor the need for future action.

Initiate a feasibility study or other methods to evaluate interest in and the potential for upgrading the fire suppression and emergency response capabilities on Red Mountain.

Status

Benton County and Benton County Fire District #4 have had preliminary discussions about the possible construction of a new fire station at Red Mountain. The District understands the future need and wants to be proactive in addressing that need.

Action

None identified at this time. The Alliance should monitor the need for future action.

Initiate a feasibility study to evaluate interest in and potential for LID participation for a small cluster wastewater system serving 2 to 10 wineries.

Status

The need for this element has not yet been identified.

Action

None identified at this time. The Alliance should monitor the need for future action.

Once the site for the Wine Village has been selected, form a committee to identify and assess the need for a domestic water source for the Wine Village property.

Status

Since the Wine Village site has not been selected, no actions have occurred to date.

Action

None identified at this time. The Alliance should monitor the need for future action.

Other infrastructure projects include the following:

1. Extending Antinori Road to Sunset Road

Status

- A County Road Improvement District (CRID) has been formed to extend Antinori Road to Sunset Road.
- The County Public Works Department is designing the road extension. Alliance representatives have been meeting with the County to refine the road design to fit the needs of the community and the existing topography.
- The suggested roundabout at the intersection of Antinori and Sunset Roads was deleted from the project.
- The County Public Works Department is in the process on collecting commitment signatures from CRID members to advance the project to the construction stage.

Action

The Alliance should continue its efforts in promoting this project in the community.

2. Bringing irrigation water to Red Mountain

Status

Kennewick Irrigation District (KID) is in the final steps to bring irrigation water to land owners that were signatory to the irrigation agreement at the end of 2009. The agreement covers approximately 1,785 acres. Ground has been broken on the new pump station that will supply the water load, and it is anticipated that the project will be completed during the summer of 2014.

Action

The Alliance should continue its efforts.

3. Red Mountain Interstate-82 Interchange – This would be a new interchange along I-82 located at approximately Milepost 100 that would more directly service Red Mountain.

Status

A local coalition continues to promote the project and seek funds for the interchange.

Action

The Alliance should continue to monitor the project.

4. Benton City Interstate-82 Interchange – This would consist of improvements to the intersection on the north side of the existing interchange, mainly creation of a roundabout at this location to help traffic flow.

Status

Washington State Department of Transportation (WDOT) has developed several alternative concepts (dated December 2011) for the Benton City roundabout.

WDOT has funding for design and engineering services and is in the process of acquiring land for the roundabout.

Action

The Alliance should continue to monitor the project.

NATIVE PLANTS AND INTEGRATED PEST MANAGEMENT (IPM) RESEARCH

The Alliance is committed to support research and pilot projects on IPM, use of native plants and other resource conservation efforts. An additional element for the research could be testing of various native rose species to determine their utility as insectaries for *Anagrus* wasps and to determine if providing habitat for these predators helps in the control of leafhoppers and cutworms.

In addition, discussions should be initiated with the WSU, Benton Conservation District and other interested parties regarding the opportunity to encourage native plant seed gathering and propagation for native plant propagation purposes.

Status

- A research program is underway at Ciel du Cheval vineyard to develop ground cover crops from native species that are indigenous to Red Mountain. The program is being conducted by WSU. The cover crops being tested are those which add Nitrogen to the soil or provide beneficial insect habitat.
- The Alliance has completed research on native plants. The wine industry (nationally and worldwide) is moving to a sustainable approach to vineyards and wine production. An Alliance goal is to establish a regimen of naturalism for Red Mountain.

Actions

- The Alliance should continue to be involved and monitor these projects.

WINE VILLAGE (MASTER PLANNED RESORT - MPR)

The 2007 RM MSP planning process identified the KID property immediately west of Sunset Road as the preferred location for the Wine Village. During review of this document at the June 6, 2012 meeting the participants discussed the importance of the Wine Village concept to the Red Mountain AVA. The group also stated that since KID has not confirmed their interest in the Wine Village on their property that the RM MSP should not identify a specific site. Any potential site for the future Wine Village should meet the site selection criteria presented in the 2007 RM MSP to be considered as a viable Wine Village site.

Status

- At this time KID is in the process of evaluating the best use of their entire property inventory and has not taken action or confirmed whether or not the proposed Wine Village use of their property meets their goals for the property.
- During 2011 the County Planning Department reviewed the Wine Village concept presented in the 2007 RM MSP for consistency with the Growth Management Act, County Comprehensive Plan, and the GMA Agricultural District. The County Planning Department has noted that while some uses may not be possible as originally proposed, alternative methods such as Master Planned Resorts (MPR's) may offer compatibility within the agricultural district.
- The County Planning Department has held discussions regarding the use of the Master Planned Resort statute (36.70A.360) in siting the Wine Village on Red Mountain. Policies for MPR's were adopted in the Comprehensive Plan process in 2007.
- The County Planning Department believes that the Wine Village concept is possible in the GMA Agricultural District through the Master Planned Resort (MPR) provisions under RCW 36.70A.360. The RCW's define MPR's as "a self-contained and fully integrated planned unit development, in a setting of significant natural amenities, with a primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor or outdoor recreation facilities".
- The County does not currently have an adopted zoning classification for MPR's but does have adopted policies in the Benton Comprehensive Plan that allows MPR's.
- The County Planning Department has developed a MPR district ordinance for in-house review. As proposed in the draft the district will be implemented as an "Overlay" zone which will allow MPR developments in certain designated zoning districts in the County. MPR's must also have the significant natural amenities and resources that make them suitable for a range of recreational or tourist and visitor serving types of land uses. Within the Red Mountain AVA, the MPR site selected must be on lands with "marginal soils" and have the support of the Alliance and other Red Mountain AVA property owners.

- New zoning ordinances were adopted (went into effect on September 1, 2011) in Benton County consistent with the Benton County Comprehensive Plan. The new ordinance included changes to the Bed and Breakfast definition allowing up to 5 rooms.
- Potential sites under consideration for the Wine Village development should fit the following criteria:
 - Land marginal for growing grapes – least suitable soils and cold air drainage areas. This is a threshold criteria that must be met before considering other site selection factors
 - Site topography suitable for Wine Village – flat to slight slopes
 - Centrally located - providing opportunities for a distinctive visitor experience where the Wine Village is immersed in vineyards and not located adjacent to or close to roads
 - A site that is visible while not being visually dominant
 - A site that provides views to Red Mountain, Horse Heaven and Rattlesnake Hills, the surrounding vineyards and the valley below
 - Centralized location – providing “hub” opportunities for trails, parking and shuttle transportation systems and provides a focal point for visitor activities
 - Diversity in trail experiences - river, vineyards, and different habitat type views
 - Ability to screen/hide parking and support facilities
 - Ability to provide a viable transportation hub

Actions

- The Alliance should continue discussions with KID and other interested parties regarding the location and design of a possible Wine Village.
- The Alliance should provide comments for Red Mountain draft planning documents and actions.
- The Alliance and others should be vigilant for opportunities to attract potential developers and funds for Wine Village implementation.

INTERPRETIVE CENTER AND TRAILS

The 2007 RM MSP proposed collaboration with the Washington State Parks Commission, the County and other potential, and especially local, project sponsors regarding the funding, design, construction and operation of the Interpretive Center, site interpretive elements, the AVA trail system and connections to the existing and future regional trail systems. The 2007 RM MSP also recommended that the Red Mountain AVA interpretive activities be coordinated with the proposed interpretive elements at the Walter Clore Wine and Culinary Center in Prosser, WA.

Status

- Washington State Parks continues to be interested in the Red Mountain AVA as a focal point and visitor destination for agricultural interpretation. For the Interpretive Center to be a sustainable facility, the Interpretive Center and trailheads would need to be self-supporting. Absent other revenue stream options these facilities would need to be within State Parks Discover Pass or day use fee system. At this time the Washington State Parks does not have capital funds for the project.
- Benton City has completed a paved trail through the town that will eventually connect to and be a part of the Tapteal Greenway Trail. The Tapteal Greenway Trail which follows along the Yakima River all the way to Richland (30 plus miles at completion). The Tapteal Greenway Trail will be an important regional trail connection for the Red Mountain AVA trail network.
- An organization called the “Ridges to Rivers Open Space Network (RROSN) formed in the Tri-Cities in 2008. This group is doing regional planning for the use and protection of Tri-Cities area natural and agrarian open spaces, and connectivity between and among those open spaces, including longer-distance regional trails.
- The County Planning staff has determined that a multi-modal “transportation hub” could be located in the Wine Village (Master Planned Resort) and provide a viable method of reducing the amount of automobile traffic on the AVA road system.

Actions

- The Alliance should continue their discussions with Benton County, Tapteal Greenway Association, RROSN, and Friends of Badger Mountain regarding trails within and extending beyond the AVA.
- Continue to work with Washington State Parks to reaffirm their interest in the Red Mountain AVA.

SIGNAGE

A well designed and coordinated system of directional signage and way-finding information can enhance a visitor’s experience to the Red Mountain AVA and be an integral part of the AVA’s visual character and identity. In addition, a way-finding system can simplify visitor access to and circulation within the AVA. The signage system should provide way-finding information at several levels including the regional scale where travelers on I-82 are provided AVA way-finding information. The second level is at the community scale where visitors to Benton City and West Richland are provided AVA way-finding information and finally within the AVA itself where visitors are directed to individual wineries and other points of interest. Benton County refers to this as a ‘three-tiered system’ for addressing signage on the Mountain. This does not address or suggest addressing signage that individual farms, wineries, or other property owners would choose to do on their own property, only signage that is in the public domain.

Status

- Tier 1 – Interstate 82 Level: This task has not been addressed to date.

- Tier 2 – Intercity Level: This would include major signs along state highways and major gateways. Other than the sign placed by the community at the southeast entrance to the AVA (from Benton City, along SR 224), this task has not been addressed to date.
- Tier 3 – AVA Level: Benton County has not addressed this though the Alliance has discussed it. Benton County currently does not have a signage ordinance or the staffing to regulate the aesthetics and the design of way finding signage. However, the County, through Conditional Use Permits can regulate the size and location of signage within certain districts (see GMA Ag. District BCC 11.18.070. (15)) Actions
- The County and the Alliance should work collaboratively with the Red Mountain community, the cities of Benton City and West Richland, and the Washington Department of Transportation to develop and implement informational and way-finding signage at all three tiers described herein.

VISITOR SERVING AREA (FORMERLY MIXED USE AREA)

The 2007 RM MSP recommended that the Alliance and the County begin discussions with “Mixed Use Area” property owners regarding the need and opportunity for a coordinated site planning effort including all properties within the area identified as the “Mixed Use Area” (AVA lands south of Highway 224 and east of Appaloosa Rd.) in the 2007 RM MSP report. Such an effort would assist in developing this important Red Mountain AVA “front door” area as a cohesive, coordinated development that reinforces the Red Mountain AVA vision while anticipating the pressure for interchange commercial uses associated with the future Red Mountain interchange.

Status

- Other than County Planning Review of the concept, no actions have occurred on this element. The County Planning Department has noted that the “Mixed Use Area” as proposed in the 2007 RM MSP is not consistent with provisions of the Growth Management Act, the County’s Comprehensive Plan or current zoning ordinances. Staff is researching alternative methods to allow tourist serving uses within a reduced boundary, i.e., small-scale recreational or tourist uses (SSRT’s) that may enable some of the mixed uses proposed for this area. The criteria for SSRT’s are similar to Master Planned Resorts as they rely on a rural setting however SSRT’s are a smaller scale development both in size and investment and usually tied to the development of individual parcels.

Actions

- “Mixed Use Area” designations should be designated as “Tourist Serving Area”. The area should be reduced in size to remove those lands within the AVA. The area should undergo further site planning to provide the designation with uses and zoning that provide assurances that this area serves the tourism needs of the Red Mountain AVA and does not promote residential or commercial sprawl.

- The Alliance should have open discussions with the County Planning Department, Planning Commission and property owners in the future regarding the opportunity for coordinated planning and development of this important area of the AVA in anticipation of development pressures related to the future Red Mountain interchange.
- If coordinated planning within the Tourist Serving cannot be carried out, the Alliance should continue to monitor development proposals and land use actions on lands adjacent to AVA lands south of highway 224.

OTHER ADJACENT LANDS

The Alliance should continue discussions with adjacent property owners and communities regarding how development on adjacent properties can benefit from the quality of proposed development for the Red Mountain AVA. Adjacent property owners and communities are encouraged to incorporate the AVA vision, proposed quality, and design guidelines into their plans and development projects.

Status

- No actions have occurred on this element.

Actions

- The Alliance should continue to monitor these properties.

8. ENDNOTES AND REFERENCES

Endnotes

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² Code of Federal Regulations Title 27, Volume 1, Part 9, Section 22, Subpart C—Approved American Viticultural Areas, Alcohol, Tobacco Products and Firearms, http://a257.g.akamaitech.net/7/257/2422/03jul20071500/edocket.access.gpo.gov/cfr_2007/aprqttr/pdf/27cfr9.22.pdf.

³ Benton County, Washington, Office of Sustainable Development. Red Mountain Conceptual Plan: A Vision of the Future for the Red Mountain AVA. Prepared by J.T. Atkins & Company PC, March 2006.

⁴ Transportation Research Board, *Highway Capacity Manual*, 2002.

⁵ According to Doug Eldred of WSDOT, information from the traffic data office for SR 224 shows a 2% reduction in volume on the weekend.

⁶ Atkins, Tom, J.T. Atkins & Company PC.

⁷ Masberg, Dr. Barbara, Central Washington University.

⁸ The average party was comprised of 2 persons in a single vehicle. Therefore, the number of parties also equals the number of visitor vehicles entering the AVA on the High Season Weekend Day.

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