

Licensed Timber Operator (LTO) would be responsible for conducting all conversion area timber harvesting and preparation activities on the Site. All conifers and hardwoods would be harvested and stumps and slash removed from the proposed vineyard sites/conversion areas by the designated LTO. Trees within the flagged conversion area boundaries would be cut by hand or with a feller buncher. Ground-based systems (i.e., tractors and rubber tire skidders) would be used to move the cut logs to landing locations. Temporary erosion control measures (e.g., installation of straw bales and silt fences and mulching or seeding of exposed soils near streams) would be implemented, consistent with the California FPRs intended to protect water quality until permanent erosion control structures are installed (refer to Section 2.4.2).

All timber harvesting operations would conform to the conditions stipulated in the THP for proposed timber operations required by Article 7, Chapter 8, Part 2, Division 4 of the Public Resources Code (PRC). Sudden Oak Death (SOD) host plants, plant parts, unprocessed wood, and wood products may only be moved off-site under current guidelines that meet CAL FIRE regulations. SOD is a disease that is killing oaks and other plant species in the western United States, including at the Project Site. The pathogen responsible for the disease is a fungus-like organism called *Phytophthora ramorum*. Compliance information for SOD would also be provided in the THP.

### 2.3.4 Vineyard Development

The Project includes the development of individual vineyard areas totaling approximately 1,861 acres. The Project proposes to develop 17 vineyards listed in Table 2-5 and illustrated in Figure 2-5. A general overview of the components involved with vineyard development (i.e., site preparation, soil preparation/grading, and vineyard planting) and operations is provided in this section. The specific components of each of the vineyards proposed for development (e.g., water storage/reservoirs, watercourses, and water collection systems) are presented in Table 2-5.

The Applicant has assessed the potential vineyard sites' suitability identified by the previous owner, North Coast Resource Management (NCRM). The assessment of suitability for vineyard development was based on specific criteria that were evaluated by field surveys and project mapping. The criteria included existing road access, slope (maximum 38 percent), soil conditions, geometric shape (minimum width of 200 feet), drainage conditions, and proximity to sensitive resources. In addition, new areas suitable for vineyard development that were discovered in the field were added to the list. The vineyard sites categorized as viable were forwarded to the Applicant's design team for further evaluation, mapping, and flagging in the field. Most of the potential vineyard sites were identified along the ridgetops where the topography is generally gently to moderately sloping (less than 15 percent). Typically, the grade breaks sharply at the margins of the ridgetops. The average slope of most of the vineyard sites varies between 5 percent and 15 percent, qualifying the majority of the vineyard areas as "Level II authorized planting" under the Sonoma County Grading, Drainage, Vineyard and Orchard Site Development Ordinance. Under this ordinance, growers planting new vineyards or replanting existing vineyards are required to use recognized conservation practices, best management practices (BMPs), and provide for riparian setbacks to protect the environment and watersheds of the County.

Table 2-5. Proposed Preservation Ranch Vineyards and Specific Site Characteristics

Vineyard Name	Total Acreage	Annual Irrigation Demand (ac-ft/yr)	Annual Evaporation Demand (ac-ft/yr)	Number of Reservoirs per Site	Reservoir A		Reservoir B		Reservoir C		Reservoir D		Reservoir E	
					Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)
<b>Bear Ridge</b>	363.4	151.25	49.28	5	2	53.60	2	69.48	2	78.80	2	53.06	2	50.60
Bear 1.0	357													
Bear 1.2	2													
Bear 1.3	1.8													
Bear 1.4	0.9													
Bear 4.0	1.7													
<b>Big Rock</b>	50.3	20.8	6.65	2	2	28.42	2	25.56	-	-	-	-	-	-
Big Rock 1.0	47													
Big Rock 2.0	3.3													
<b>Buckwheat</b>	27.9	10.7	4.98	2	2	21.26	2	5.24	-	-	-	-	-	-
Buckwheat 1.0	13.5													
Buckwheat 2.1	2.5													
Buckwheat 2.2	2.5													
Buckwheat 3.0	6.8													
Buckwheat 4.0	2.3													
Buckwheat 4.1	0.3													
<b>Evans</b>	198.3	83.4	20.26	5*	2	10.5	2	38.96	2	68.56	2	10.3	-	-
Evans 1.0	158													
Evans 2.0	26.2													
Evans 3.0	14.1													
<b>Fuller Creek</b>	23.7	17.45	6.08	1	2	17.02	-	-	-	-	-	-	-	-
Fuller Creek 2.0	16.9													
Fuller Creek 2.2	5.8													
Fuller Creek 6.1	0.5													
Fuller Creek 6.4	0.5													
<b>Gardner</b>	95	39.5	13.39	3	2	23.16	2	11.8	2	18.32	-	-	-	-
Gardner 1.0	38.5													
Gardner 2.0	15.1													
Gardner 3.0	23.9													
Gardner 4.0	9.4													
Gardner 5.0	6.7													
Gardner 5.1	1.4													
<b>Hoover 1.0</b>	61.1	26.2	10.82	2	2	17.02	2	28.82	-	-	-	-	-	-
<b>Icola</b>	130.8	54.7	17.88	2	2	61.76	2	51.16	-	-	-	-	-	-
Icola 1.0	122													
Icola 1.1	7.1													

Table 2-5. Proposed Preservation Ranch Vineyards and Specific Site Characteristics

Vineyard Name	Total Acreage	Annual Irrigation Demand (ac-ft/yr)	Annual Evaporation Demand (ac-ft/yr)	Number of Reservoirs per Site	Reservoir A		Reservoir B		Reservoir C		Reservoir D		Reservoir E	
					Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)
Icola 1.3	1.7													
<b>John West</b>	<b>52.2</b>	<b>22.1</b>	<b>5.61</b>	<b>1</b>	<b>2</b>	<b>37.64</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
John West 1.0	35.4													
John West 2.0	16.8													
<b>Lookout</b>	<b>21.1</b>	<b>7.6</b>	<b>3.22</b>	<b>1</b>	<b>2</b>	<b>37.64</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Lookout 1.0	18.5													
Lookout 2.0	2.6													
<b>Lower Easy</b>	<b>135.9</b>	<b>56</b>	<b>17.08</b>	<b>2</b>	<b>2</b>	<b>55.44</b>	<b>2</b>	<b>38.04</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Lower Easy 1.0	126.3													
Lower Easy 1.1	3.5													
Lower Easy 1.2	0.9													
Lower Easy 3.0	1.9													
Lower Easy 3.1	3.3													
<b>Middle Hoover</b>	<b>110.7</b>	<b>47</b>	<b>18.73</b>	<b>3</b>	<b>2</b>	<b>23.98</b>	<b>2</b>	<b>28.7</b>	<b>2</b>	<b>13.12</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Middle Hoover 1.0	64.7													
Middle Hoover 2.0	25													
Middle Hoover 3.0	8													
Middle Hoover 3.1	11.3													
Middle Hoover 3.1.2	1.7													
<b>Moody</b>	<b>85.7</b>	<b>34.3</b>	<b>13.26</b>	<b>2</b>	<b>2</b>	<b>51.74</b>	<b>2</b>	<b>24.18</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Moody 1.0	65													
Moody 2.0	18.9													
Moody 3.0	1.8													
<b>Oak Ridge</b>	<b>70.1</b>	<b>29.8</b>	<b>12.06</b>	<b>5</b>	<b>2</b>	<b>6.38</b>	<b>2</b>	<b>8.84</b>	<b>2</b>	<b>16</b>	<b>2</b>	<b>7.26</b>	<b>2</b>	<b>11.64</b>
Oak Ridge 1.0	43.4													
Oak Ridge 2.0	10													
Oak Ridge 2.1	4.2													
Oak Ridge 2.2	0.7													
Oak Ridge 5.0	4													
Oak Ridge 5.0.1	2.8													
Oak Ridge 6.0	5													
<b>School</b>	<b>140.4</b>	<b>58.95</b>	<b>18.67</b>	<b>2</b>	<b>2</b>	<b>34.8</b>	<b>2</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
School 1.0	68.2													
School 2.0	51.2													
School 3.0	7.7													
School 4.0	6.5													

Table 2-5. Proposed Preservation Ranch Vineyards and Specific Site Characteristics

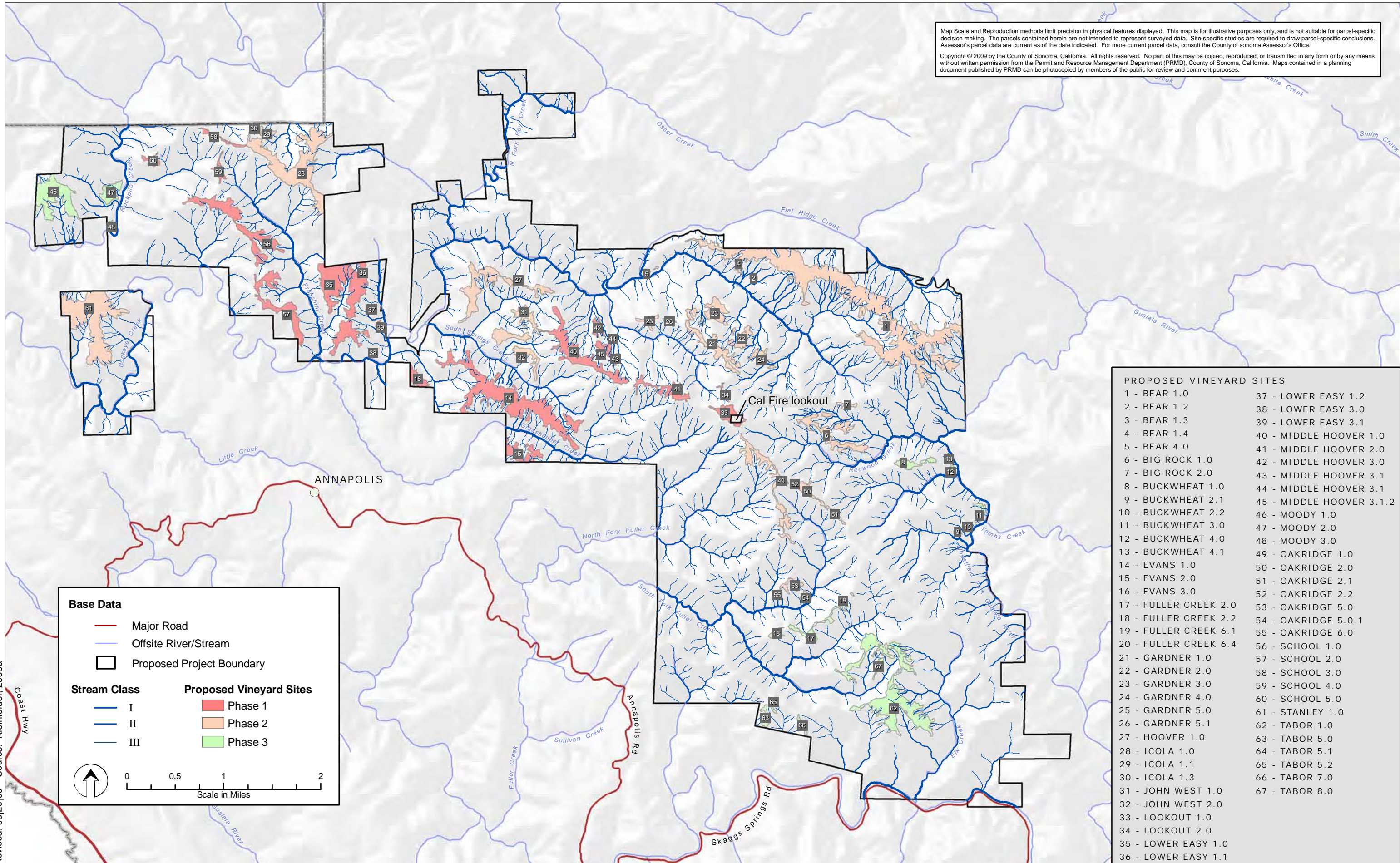
Vineyard Name	Total Acreage	Annual Irrigation Demand (ac-ft/yr)	Annual Evaporation Demand (ac-ft/yr)	Number of Reservoirs per Site	Reservoir A		Reservoir B		Reservoir C		Reservoir D		Reservoir E	
					Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)	Mean Annual Runoff (ft)	Potential Annual Water Harvest (ac-ft/yr)
School 5.0	6.8													
Stanley 1.0	137	57.3	17.28	2	2	64.22	2	54.84	-	-	-	-	-	-
Tabor	157.5	66.9	16.86	3	2	27.06	2	49.18	2	29.46	-	-	-	-
Tabor 1.0	140.8													
Tabor 5.0	6.7													
Tabor 5.1	1.3													
Tabor 5.2	0.8													
Tabor 7.0	4.5													
Tabor 8.0	3.4													

Note: ac-ft/yr = acre-feet per year; ft = feet (depth)  
 \*Evans Vineyard Area has an existing reservoir with a storage capacity of 18 ac-ft, a mean annual runoff of 2 ft, and an annual water harvest rate of 45.7 ac-ft/yr.

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Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to draw parcel-specific conclusions. Assessor's parcel data are current as of the date indicated. For more current parcel data, consult the County of Sonoma Assessor's Office.

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PROPOSED VINEYARD SITES	
1 - BEAR 1.0	37 - LOWER EASY 1.2
2 - BEAR 1.2	38 - LOWER EASY 3.0
3 - BEAR 1.3	39 - LOWER EASY 3.1
4 - BEAR 1.4	40 - MIDDLE HOOVER 1.0
5 - BEAR 4.0	41 - MIDDLE HOOVER 2.0
6 - BIG ROCK 1.0	42 - MIDDLE HOOVER 3.0
7 - BIG ROCK 2.0	43 - MIDDLE HOOVER 3.1
8 - BUCKWHEAT 1.0	44 - MIDDLE HOOVER 3.1
9 - BUCKWHEAT 2.1	45 - MIDDLE HOOVER 3.1.2
10 - BUCKWHEAT 2.2	46 - MOODY 1.0
11 - BUCKWHEAT 3.0	47 - MOODY 2.0
12 - BUCKWHEAT 4.0	48 - MOODY 3.0
13 - BUCKWHEAT 4.1	49 - OAKRIDGE 1.0
14 - EVANS 1.0	50 - OAKRIDGE 2.0
15 - EVANS 2.0	51 - OAKRIDGE 2.1
16 - EVANS 3.0	52 - OAKRIDGE 2.2
17 - FULLER CREEK 2.0	53 - OAKRIDGE 5.0
18 - FULLER CREEK 2.2	54 - OAKRIDGE 5.0.1
19 - FULLER CREEK 6.1	55 - OAKRIDGE 6.0
20 - FULLER CREEK 6.4	56 - SCHOOL 1.0
21 - GARDNER 1.0	57 - SCHOOL 2.0
22 - GARDNER 2.0	58 - SCHOOL 3.0
23 - GARDNER 3.0	59 - SCHOOL 4.0
24 - GARDNER 4.0	60 - SCHOOL 5.0
25 - GARDNER 5.0	61 - STANLEY 1.0
26 - GARDNER 5.1	62 - TABOR 1.0
27 - HOOVER 1.0	63 - TABOR 5.0
28 - ICOLA 1.0	64 - TABOR 5.1
29 - ICOLA 1.1	65 - TABOR 5.2
30 - ICOLA 1.3	66 - TABOR 7.0
31 - JOHN WEST 1.0	67 - TABOR 8.0
32 - JOHN WEST 2.0	
33 - LOOKOUT 1.0	
34 - LOOKOUT 2.0	
35 - LOWER EASY 1.0	
36 - LOWER EASY 1.1	

Revised: 03/20/09 Source: Kleinfelder, 2008a



Preliminary vineyard development plans were prepared for each potential vineyard site. The plans included preliminary design for the vineyard layout, topographic mapping (i.e., general grading), a soil ripping plan, and drainage plan. The general process for development of the individual vineyards is described in the following section.

#### SITE PREPARATION

Vineyard site preparation would occur after the timber has been harvested and cleared. These operations would be conducted by the LTOs. The conversion area would be cleared of roots, stumps, and woody material with a tractor using a brush rake or excavator. Stumps and roots would be pulled out of the ground with an excavator, bulldozer, or other equivalent equipment. Unmerchantable woody material would be tractor piled and chipped, with chips hauled off site, or tractor piled and slash burned on site. Chips may be spread as a ground cover or incorporated for decomposing organic matter in the vineyard and/or spread in adjacent forested areas. The chips would not be stockpiled. Erosion control measures in compliance with federal, state, and local regulations/ordinances would be put in place prior to the onset of the winter period (i.e., before October 15).

#### VINEYARD SOIL PREPARATION AND GRADING

Following site preparation by the LTOs, the vineyard installation contractor would begin soil preparation for the vineyards. Typically, the soil would be ripped in order to enhance infiltration and the water storage capacity of the soil. Soil preparation depth would vary depending on local soil conditions. Subsequent to soil preparation, minor grading of vineyard sites would be required to provide an even surface for farming operations. Grading would smooth contours and prepare access lanes for tractors, driveways, parking areas, and sites pads for farm worker housing and agricultural buildings. No fumigation of the soils is proposed.

#### WATERCOURSES/GRADING

The California FPRs require establishment of Watercourse and Lake Protection Zones (WLPZs), or buffers, to ensure the beneficial uses of water, native aquatic and riparian species, and the functions of the riparian zones are protected. The stream classification and proposed buffers for the Project according to the FPRs are as follows:

- Class I Streams have the presence of fish, and instead of the Board of Forestry (BOF) requirement that mandates a 300-foot buffer (150 feet on each side), the Project proposes 200-foot zones on each side.
- Class II Streams and Springs have the presence of aquatic animal life during a portion of the year, and require a 100-foot buffer on each side, which would be implemented as part of the Project.

No grading operations would occur at the Site within the buffers described above for Class I and II streams. Activities within or adjacent to the WLPZs would be controlled in accordance with CAL FIRE FPRs and other regulatory requirements. Class III streams<sup>3</sup> would be evaluated in the field and may be filled and farmed-over depending on the depth of the top soil, soil type, slope,

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<sup>3</sup> Class III streams are capable of moving sediment to a Class I or Class II watercourse, and require a 25-foot buffer on slopes less than 30 percent and a 50-foot buffer on slopes greater than 30 percent.

stream stability, and height and width of the stream channel. Project application documentation indicates that approximately 363 Class III stream segments would be subject to grading operations within the footprints of the proposed conversion sites (Figure 2-5). The total length of these Class III stream segment is approximately 55,580 feet (10.53 miles). The fill within the Class III farm-over sites would be keyed or benched into the subsoil to stabilize the fill. The depth of the fill in Class III stream area would be variable but could be greater than 10 feet.

The design of the fill would depend on site-specific topography and soil conditions. The limits to filling the Class III farm-over sites are shown in the individual Vineyard Development Plans. It is noted that vineyard conversion grading would extend above the Class III watercourses and, therefore, ultimately drain to the watercourses.

Perimeter buffers are planned around each of the potential vineyard blocks. In general, the width of the buffers would be 30 feet along the north perimeter of the vineyard and 75 feet on the east, west and south perimeters of the vineyard.

#### VINEYARD PLANTING

The vineyards would be configured with the vine rows running north 45 degrees east on slopes less than 10 percent. On steeper slopes, the rows would be oriented parallel to the slope gradient (i.e., straight up and down the slope). The vine rows would be spaced at 1.6 to 1.8 meter (5.3 to 5.9 feet)-intervals, and the vines within the rows would be spaced on 1.0 meter (3.3 feet)-centers. The Applicant proposes to plant nursery-raised vines with drought- and phylloxera<sup>4</sup>-resistant rootstocks. Each vineyard would be fenced to exclude deer. A total of approximately 450,000 feet (85 miles) of fencing would be required to enclose all of the vineyard areas. The fencing would be 8-foot high deer-resistant fencing with exit doors at corners to allow for the release of any trapped wildlife. The fencing is designed to allow for passage of small native animals. Fencing would be placed as close to the vineyard footprint edge as practical to reduce impacts on wildlife habitat and future timber management in areas adjacent to the vineyards.

#### WATER STORAGE/RESERVOIRS

The Project would build approximately 40 new 10- to 49-acre-foot reservoirs within or adjacent to the proposed vineyards. All water for vineyard irrigation would be supplied by the reservoirs only. The use of reservoirs is intended to eliminate the need for extraction from streams or groundwater development (e.g., wells or springs) for vineyard irrigation purposes. The irrigation demand for vineyards is estimated to be about 6 inches per year. Surface runoff from a portion of the vineyards would be collected via a constructed drainage system. The typical system would include grading to direct sheetflow (i.e., surface flow not concentrated into a natural channel) into pipes to convey the flows to the reservoirs. The grading would include the installation of grass-lined swales within the vineyards that would initially collect the sheetflow and direct it to inlets and a subsurface piping system. The systems have been designed for a 100-year storm event in accordance with the Sonoma County Water Agency (SCWA) Flood Control Design Criteria Manual (1983) and to flow by gravity to the reservoirs. The reservoirs have been sited based on the ability to collect water by gravity and discharge to a stable stream channel. Each reservoir would act as storage for irrigation and as detention to mitigate peak runoff from the

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<sup>4</sup> An aphid, of the genus *Phylloxera*, that is destructive pest for viticulture.

vineyard and provide for removal of sediment from runoff. Outlet weirs would be sized to limit the outflow to approximately the predevelopment flow rate.

Excavation of reservoirs would take place only during the dry season period of May 1 to October 15. The dam surfaces and exposed soils above the high waterline of the reservoir would be protected from surface erosion by a combination of grass seeding (at a rate of 25 pounds per acre) and straw mulch (at a coverage rate of 90 percent). These soil stabilization measures would be applied prior to the onset of the wet season (on/or before October 15). All work related to reservoir construction would be done in accordance with the Clean Water Act requirements for stormwater discharges and other applicable regulatory requirements. All reservoirs would be sized and configured to be exempt from California Department of Water Resources Division of Safety of Dams (DSOD) requirements (i.e., size of reservoirs and height of dams below DSOD thresholds for regulation).

#### STORMWATER COLLECTION SYSTEM

The proposed stormwater irrigation collection system has been sized for a 100-year storm event in accordance with the SCWA Flood Control Design Criteria Manual (1983). The collection system would capture and direct sheet flow water to the reservoirs, where the water will be stored and used for irrigation. Additionally, the reservoirs have been designed to provide detention of runoff to reduce the potential for vineyard field erosion and erosion of stream channels potentially associated with peak flow increases from conversion/vineyard areas. For the purposes of designing the collection system, the primary criterion was to collect runoff from a sufficient amount of acreage within each vineyard site to meet the annual irrigation demand.

The SCWA Flood Control Design Criteria Manual uses the “Rational Method” for determining runoff tributary areas less than 640 acres. The potential vineyard sites are located on the ridgetops, limiting the individual vineyard block runoff tributary areas to well below 640 acres. Therefore, the Rational Method was considered the appropriate method for estimating runoff within the vineyards.

#### VINEYARD OPERATIONS

The Applicant proposes to carry out and employ farming practices that will qualify as “sustainable” and further sustainability goals of the Project. The following sections describe the standard operating procedures for maintaining the vineyards on the Project Site once constructed such as water collection and irrigation, floor management, pest and weed control using Integrated Pest Management (IPM) techniques, erosion control, farm labor housing, and field work (i.e., pruning, picking, suckering, etc.).

#### VINEYARD IRRIGATION/RESERVOIRS

Irrigation supply would be provided as a supplement to surface water that infiltrates the soil profile during the rainy season. The supplemental irrigation would provide water to the plants into the summer months. The Project estimates that providing approximately 6-acre inches of water (75 gallons per vine per year assuming 2,188 vines planted per acre) is a reasonable irrigation program. Drip irrigation would be applied slowly and precisely through emitters to minimize the potential for runoff. Any suspended sediment

that might still remain in the water (after being in a settling pond for months and not captured in the irrigation filter system) would be deposited beneath the emitter.

Vineyard irrigation would be provided by water captured during winter rains and stored in reservoirs constructed on each vineyard site. Water for irrigation would be pumped and/or flow by gravity from the reservoirs through buried irrigation mains located within the vineyard avenues. The vineyard avenues provide access and a corridor for the irrigation mains and drainage collection facilities. The irrigation water would be distributed to the vines via an underground pipe and aboveground drip hoses (with emitters of ½ or 1 gallon per minute). Drip irrigation systems are effective for a distance of approximately 350 feet from the irrigation main, therefore the vineyard avenues would be spaced at a maximum distance of 700 feet (350 feet in each direction).

#### VINEYARD FLOOR MANAGEMENT

Management of the vineyard areas between grapevines would consist of establishing and maintaining a cover crop between the rows. Managing vegetative growth under the vine row in the first three years of growth would minimize competition with the vine for irrigated water and nutrients. Cover crop vineyard floor coverage is targeted at 70 percent year around.

Cover crops are primarily planted in the late fall and before the winter rains. Straw cover would be utilized while the cover crop is germinating and establishing roots. The seed selected for the cover crop is usually a mixture of small grain, clover, and grass. During vineyard establishment, the focus would be on erosion control and establishing some biomass for organic matter in the soil. The small grain establishes quickly while the clover and grass are plants that fill in to create dense growth. Once the cover crop is established, the ground between the rows would be disturbed only to reestablish cover crops as needed. The cover crop would be maintained by mowing when the surface becomes dry enough to limit its use of ground moisture.

#### EROSION CONTROL

Erosion control would be accomplished by a combination of soil conservation, erosion control structures, farming practices and maintenance. The management practices are primarily common “Best Management Practices (BMPs)” for vineyard development and are in accordance with Sonoma County’s Grading, Drainage, Vineyard and Orchard Site Development Ordinance. Temporary erosion control methods would comply with the National Pollutant Discharge Elimination System (NPDES) Stormwater Pollution Prevention Plans (SWPPPs) and the Sonoma County Grading, Drainage, Vineyard and Orchard Site Development Ordinance.

#### STRUCTURAL BEST MANAGEMENT PRACTICES

- Infield diversion swales would be used to limit slope length and the potential for uncontrolled channelization of sheetflow. Infield diversions have gradients of 3 to 5 percent and would be installed across the slope contours (i.e., cross-sloped).
- An underground storm drain collection system would be used to carry concentrated flows off the vineyard to the reservoirs or existing drainages instead of concentrating flow into surface channels.

- Storm drain pipe and ditch outlets would be lined with riprap to prevent scour.
- Peak runoff during storm events would be attenuated by the detention ponds. Attenuation of peak flows reduces the amount of erosion occurring in the existing drainages during runoff events.
- Rock check dams would be used in inverts of roadside drainage ditches to reduce velocity and trap sediment.
- Temporary erosion control measures include silt fences to control discharges of sediment into adjacent areas until permanent vegetation is established.
- Permanent all-weather rock roads would be established and graded to drain into the storm drain collection system.
- Existing drainage outfalls would be stabilized to prevent the potential for erosion and sedimentation. Temporary measures would be removed as appropriate upon establishment of permanent grass cover crop.
- Erosion control blankets or straw would be placed on disturbed areas until permanent cover crops are established.

#### FARMING PRACTICES

- Use of non-tilled cover crop of self-reseeding annuals between vine rows including barley, blando brome, crimson clover, zorro fescue, and annual rye grass to achieve 70 to 80 percent cover. In late spring, the cover crop is mowed and chopped.
- Weed and erosion control directly under the vines using mulched organic material.
- Before October 15, all disturbed areas not otherwise protected by other measures would be revegetated with a seed mix that consists of barley, blando brome, crimson clover, and zorro fescue at the rate of 35 pounds per acre. Straw mulch would be applied at an adequate rate (typically 2 tons per acre) to achieve a surface cover that would protect the soil surface until the seeded area can establish itself.
- A 30-foot-wide buffer zone would be established around the vineyard perimeter with a cover crop. This traffic-tolerant cover crop would act as an additional sediment trap surrounding the vineyard.

#### MAINTENANCE

- After the first day of heavy rain of the season, the erosion control measures would be inspected for deficiencies. Rock check dams, straw bales, silt fencing, ditches or other items added as necessary to ensure that the sediment and erosion control measures remain effective.
- After heavy rains, ditches and swales would be inspected for excessive erosion and repaired, as required, to prevent further erosion.
- Sediment would be removed from sediment traps and sediment retention ponds on a regular basis. The sediment would be redistributed onto the vineyard.

- Permanent storm drain inlets and piping would be regularly inspected for plugging that might occur due to leaves, debris, or sediment and would be cleaned out regularly.

#### FARM LABOR HOUSING AND WORK FORCE

The Project proposes an agricultural work force that includes both full-time (i.e., non-seasonal) and seasonal agricultural workers for vineyard operations. Two types of on-site housing would be provided for 31 full-time employees. The Project would include construction of four “agricultural employee housing units” to provide housing for vineyard supervisors and their families. The units would be located within either the proposed Lower Easy or Evans Ridge vineyards or split between both vineyards. The specific locations of the conventionally-built, stand-alone units have not been determined but would be chosen on the basis of suitable access, septic capability, and water supply availability. The housing would be provided in compliance with the standards specified in County Code Section 26-10-1010(m)(2).

In addition to the housing units for the vineyard supervisors, housing for 31 year-round, full-time farm workers will also be provided as part of the Project. The housing would consist of bunkhouses for the workers only and would not, therefore, provide housing for their spouses or children. The Applicant has also indicated that the Project may also include bunkhouse units to accommodate 28-215 seasonal workers. The bunkhouses for the full-time and seasonal workers would also be located within the Lower Easy or Evans Ridge vineyards. Currently, the number and specific locations of the bunkhouses has not been determined but would be finalized on the basis of access, availability of water supply, and septic capability. The requirements of County Code Section 26-88-010(o) would apply to the citing and design of the proposed full-time worker bunkhouse units; housing for seasonal workers would need to comply with Section 26-88-010(l).

The Project proposes to use farm labor contractors to provide seasonal labor. Portable latrines would be provided at work sites along with potable water containers to avoid reliance on groundwater. All seasonal workers would be transported to and from the vineyards daily via privately-owned vehicles provided by the farm labor contractor. The majority of the seasonal workers are expected to be transported to the Project from the greater Santa Rosa and Windsor/Healdsburg areas.

The demand for seasonal workers would vary throughout the year and would be dependent upon seasonal vineyard management activities. The general vineyard operational and harvesting procedures, techniques, staffing, and time frames when all proposed vineyards are in full production are outlined below:

- Mid-January to March – During the pruning season, the labor force requirement is based on estimated 1/4-acre per day per worker demand (assuming 2,400 vines per acre). Based on 1,500 net vineyard acres, the labor requirement would be 6,000 labor days, which would require up to 125 workers over 24 working days. Seasonal labor demand would be 31 full-time and **90-215 seasonal workers** over 48 working days.
- March – Growth begins for canes and shoots.

- April to May – This is the “Suckering” season during which the primary labor is required to manipulate growth through selective pruning of canes and shoots. This labor force is based on 1/4-acre per day per worker. Based on 1,500 net vineyard acres, the labor requirement would be 6,000 labor days, which would require up to 250 workers over 24 working days. Seasonal labor demand would be **215 seasonal workers** and 31 full-time workers.
- June to July – Selective pruning of the canopy is performed during this season and irrigation is also performed. The labor force requirement is typically 1/2 of that required for pruning or suckering and is estimated at 6,000 labor days or 125 workers over 48 working days. Seasonal labor demand would be **90-215 seasonal workers**.
- August – During this “slack” period, some hand weeding is performed and irrigation is also performed. The labor force required for canopy management would still be utilized during this period so labor demand would be **28 seasonal workers** over 24 working days.
- September to mid-October – Preparation for harvest starts with harvest beginning about mid-September and ending by mid-October. Labor requirements can be estimated on the basis of typical grape harvesting activities. Assuming that grape production is approximately 3.5 tons per acre, the 1,500 net vineyard acres would produce approximately 5,400 tons. A work crew of 9 workers plus tractor drivers can harvest approximately 10 tons per day. The harvest season is estimated to extend over a 6-week period (42 labor days). Based on these assumptions, a harvest crew of **117 to 125 seasonal workers** would be required, in addition to the 31 full-time workers who would provide support.

#### ANCILLARY VINEYARD SUPPORT BUILDINGS AND OPERATION CENTER

Agricultural buildings would be constructed that would house tractors and other equipment as well as store farm chemicals used for vineyard maintenance. These buildings would be associated with different vineyard blocks, and would be located in an area central to those blocks.

### 2.3.5 Voluntary Merger

Though the Property is currently assessed via the 103 Assessor’s Parcel Numbers (APNs), past County determinations have recognized that the Project Site contains 160 parcels. Many of these parcels were created by government land grants or early deed transactions at the turn of the century (refer to Figure 2-2). The existing parcels range from 20 acres to 640 acres in size. Though the existing parcels are legal for separate sale, lease, or finance many are inconsistent with the minimum lot sizes or densities specified in current General Plan and Zoning Ordinance requirements.

With regards to current General Plan densities, the 19,300-acre Project Site includes approximately 3,762 acres in the 320-acre density district and 15,538 acres in the 240-acre density district. If all the existing parcels were merged and resubdivided into parcels consistent with the existing General Plan and zoning densities, the maximum number of parcels that could be hypothetically created on the 19,300-acre Site (as recorded on the County Assessor’s parcels) is 75; this includes 11 parcels in the 320-acre density area and 64 parcels created in the 240-acre

density area. Since there are 160 historic parcels already recognized by the County on the Project Site, the existing configuration of parcels theoretically exceeds the current General Plan recommended densities by 85 parcels (i.e., 160 existing parcels less than 75 conforming parcels). The Applicant proposes to merge parcels such that the total number of parcels on the Site is reduced from 160 to 63, a reduction of 97 parcels. The new parcels would range from 40 to 1,881 acres in size. Parcel consolidation is proposed by the Applicant to:

- Reduce the development potential on the Project Site;
- Help assure that ownerships would remain primarily devoted to resource production rather than rural development; and
- Create parcels large enough to support timber production.

### **2.3.6 Road Improvements and Maintenance**

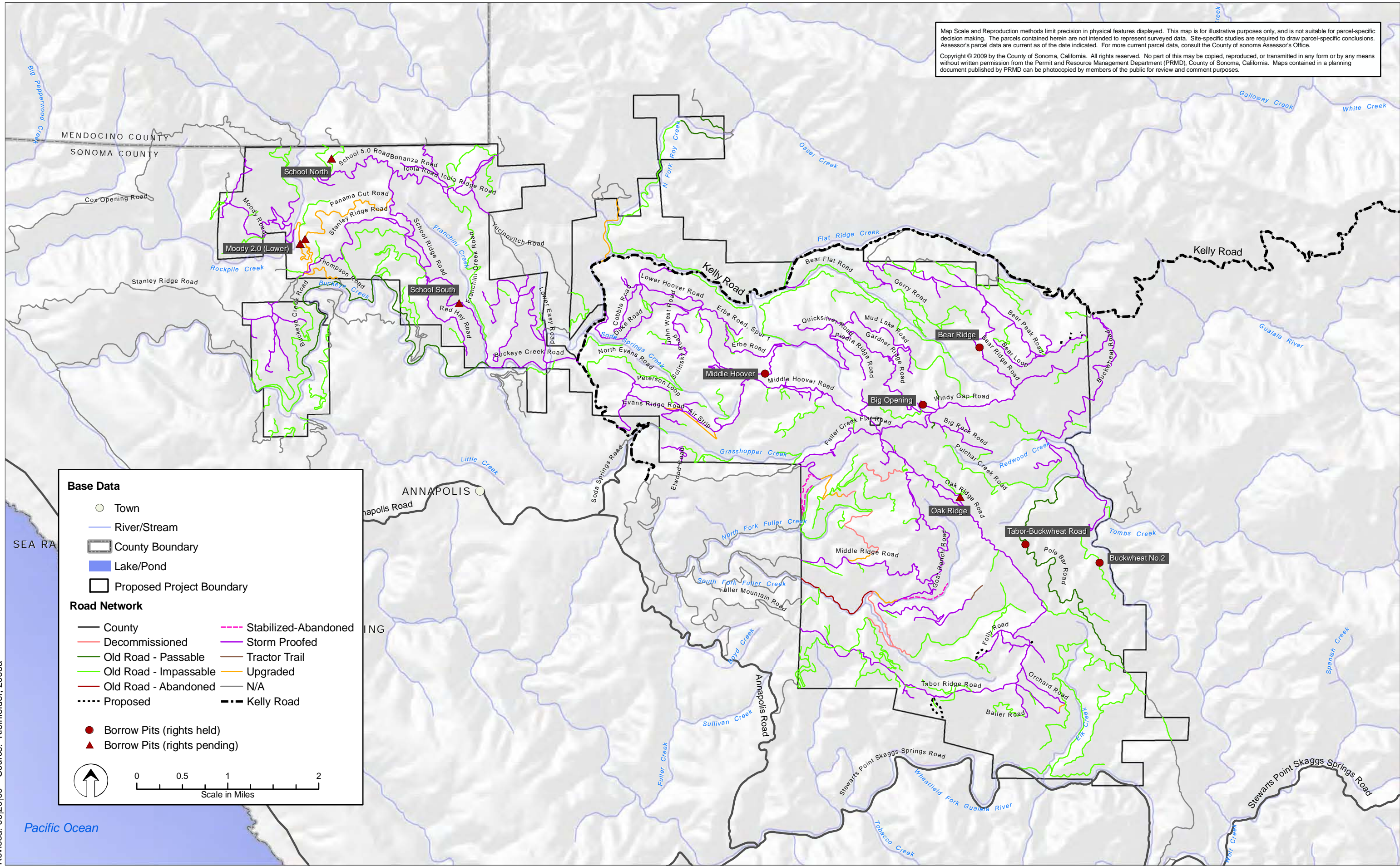
The Project would implement property-wide road development and improvement plans in conjunction with vineyard development (Figure 2-6). These road improvements are proposed to be implemented as conditions of approval of the Project. There are approximately 190 linear miles of existing private, unpaved roadways identified within the Project Site. The existing roads have been used to serve past timber harvesting and agricultural activities. The Applicant has identified 93 miles of the existing roads that would be needed to serve and access the proposed conversion sites and/or the subsequent vineyard operations. The Project proposes to upgrade the 93 miles of roadways in a phased approach that would improve the roads prior to the commencement of timberland conversion, vineyard, or housing operations at each site.

The Project proposes two main goals for road redevelopment. The first goal of the road improvements is to reduce current impacts of uncontrolled sediment generated by the existing road system. The second goal is to develop an erosion control and erosion prevention plan that when implemented would achieve the following objectives:

1. Provide for year-round and safe use of specified project roads;
2. Reduce long-term road maintenance requirements and costs; and
3. Reduce or minimize the risk of (potential for) future sediment delivery to nearby streams by improving road surface drainage and upgrading road drainage structures to accommodate the 24 hour, 100-year storm discharge (i.e., to conform with current NOAA Fisheries, CAL FIRE, Regional Water Quality Control Board [RWQCB], and CDFG standards).

Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to draw parcel-specific conclusions. Assessor's parcel data are current as of the date indicated. For more current parcel data, consult the County of Sonoma Assessor's Office.

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**Base Data**

- Town
- River/Stream
- ▭ County Boundary
- ▭ Lake/Pond
- ▭ Proposed Project Boundary

**Road Network**

— County	--- Stabilized-Abandoned
— Decommissioned	— Storm Proofed
— Old Road - Passable	— Tractor Trail
— Old Road - Impassable	— Upgraded
— Old Road - Abandoned	— N/A
--- Proposed	--- Kelly Road

● Borrow Pits (rights held)  
▲ Borrow Pits (rights pending)

Scale in Miles: 0, 0.5, 1, 2

Revised: 03/20/09 Source: Kleinfelder, 2008a



Road assessments and erosion inventories have been conducted by the Applicant using the CDFG approved “Upland Assessment Methodologies,” that were slightly modified to address ranch needs as described in the California Salmonid Stream Habitat Restoration Manual (Flosi et. al. 2006). The road assessments included the predicted future erosion that would be associated with stream crossing erosion, fine sediment production from “hydrologically connected” road reaches, fill failures, and landslides along the inventoried roads. Specific road points with potential sediment delivery documented by the road assessment(s) were:

- (1) prioritized for treatment based on the volume of future sediment delivery and/or likelihood of the erosion occurring in the near future;
- (2) have prescribed corrective measures to prevent future erosion such as installing new, larger culverts, outsloping roads (with and without inboard ditches), constructing rolling dips, etc.; and
- (3) analyzed to develop estimated costs for implementing the recommended treatments (PWA 2006).

During initial Project development, the Applicant identified existing on-site logging roads that would be needed to access the conversion/vineyard development sites. The Applicant has identified approximately 93 miles of roadway improvements. Of those, about 63.9 miles of existing on-site logging roads would need to be improved to provide reliable access to Project components under Phases 1, 2, and 3 of the road improvement program (refer to Table 2-6). The proposed road improvements would include upgrading and/or storm proofing of existing logging roads to permanent four-season standards with some portions upgraded to meet Sonoma County and CAL FIRE “Fire Safe Standards” (Sonoma County Fire Safe Standards, Ordinance No. 5370, Article V., Division B., Sections 13-35) (Figure 2-6). Roughly 62.4 miles of existing roads would be upgraded to a storm-proofed condition with an “all-weather” surface (Phases 1, 2, and 3 of road improvements, refer to Table 2-6). The remaining 1.5 miles of access roads have already been storm-proofed and currently have an all weather rock surface (Figure 2-6).

In addition to the 63.9 miles (or 69 percent of the total improvement) of existing roads that would be upgraded under Phases 1, 2, and 3 of the road improvement program, approximately 28.7 miles (or 31 percent) of the existing on-site road system on the upper slope and ridge tops would be upgraded. These improvements would be made as Phase 4 of the roadway improvement program (refer to Table 2-6). These roads would provide access to vineyard areas and accommodate harvest operations for the timberland conversion. The road improvements would include about 25.6 miles of existing roads and 3.1 miles of proposed new road). The Phase 4 road improvement locations were selected to ensure that vineyard activities do not preclude efficient access for timber management operations on the Project Site. Roads would be retained within or on the edges of the new vineyard locations in a manner that provides efficient access to the timber resource without unreasonably interfering with vineyard operations.

Table 2-6. Number of Treatment Sites and Storm Proofing Miles

Phase	Risk of Sediment Delivery		No Risk of Sediment Delivery		Total	
	# Sites	Road Miles	# Sites	Road Miles	# Sites	Road Miles
1	68	6.3	39	5.8	107	12.1
2	229	12.8	75	11.9	304	24.7
3	205	16.5	55	10.6	260	27.1
4	63	11.8	132	16.9	195	28.7
<b>TOTAL</b>	<b>565</b>	<b>47.4</b>	<b>301</b>	<b>45.2</b>	<b>866</b>	<b>92.6</b>

### 2.3.6.1 Road Improvements, Upgrades and Maintenance Activities

The proposed road improvements include approximately 565 repair sites or improvement segments. A wide range of improvement activities would be implemented that would result in physical changes during or after construction of the improvements. The range of proposed improvement activities would include:

- Preparation for and installation of all-weather roadway surfaces (using aggregate provided from onsite borrow pits);
- Grading to widen existing roadways;
- Installation of vehicle turn-outs;
- Grading to outslope roads surfaces;
- Construction or modification of roadside ditches for runoff collection;
- Installation of rolling dips and other drainage techniques to disperse road runoff;
- Repair landslide damage to roads;
- Replacement of unstable culverts and/or installation of new or larger culverts;
- Install armored fill crossing of some stream crossings; and
- Decommissioning of roadway segments.

These tasks are described in greater detail in the following section and in the Road Plan prepared for the Project (Kent & Associates 2008). With regards to these on-site roads, the Applicant has proposed that all parcel owners within the Project Area sign an agreement to participate in a road maintenance program to provide for the long-term maintenance of these roads.

The road improvement and maintenance task consists of using standard equipment such as bulldozers, excavators, backhoes, scrapers, graders, dump trucks, and water trucks. These activities would result in some localized earth, vegetation, and possibly, stream disturbance in the areas of the repairs or improvements.

There are two basic techniques for road stabilization and restoration: one is decommissioning (road closure) and the other is upgrading to storm proof status. Decommissioning is the removal of those road elements that reroute hillslope drainage and present slope stability hazards. It involves such tasks as decompacting road surfaces and installing road surface drainage (e.g., cross road drains or road outsloping), excavating unstable sidecast and road fill, and fully excavating stream crossing fills (not just culvert removal). Road upgrading to storm-proof status involves a variety of corrective treatments. The improvements include installing new and larger culverts; upgrading stream crossings for the 100-year flood flow event; outsloping the roads with and without inboard ditches (i.e., reduce the potential for concentration of runoff); constructing rolling dips; and the application of drainage techniques to improve dispersion of road runoff. In general, road upgrading consists of using standard equipment (e.g., bulldozers, excavators, backhoes, and scrapers) for stream crossing upgrades, excavating selected unstable or potentially unstable fill slopes, and dispersing road runoff.

The main line property access road off Kelly Road through Evans Ridge (Figure 2-6) to the road junction just east of the fire station lookout would be redeveloped as two travel lanes of 18 feet.

This main artery into the Property would have a minimum 8-inch rock aggregate base with an armorcoat. All other roads used as vineyard access are to be single lane with a 14-foot minimum road width. Turnouts would construct at intervals not to exceed 500 feet as feasible. These 14-foot road running surfaces would have a minimum 6-inch rock aggregate base.

All new culverts installed would be sized for a 100-year flood flow event. Culverts would be placed on line and on grade with the natural stream channel above and below the crossing site. When it is not feasible to place the culvert on the stream channel grade and the pipe outlet is above a road fill, a downspout of sufficient length would be installed to carry the outflow past the base of the fill slope to be discharged into an armored stream channel. Culvert inlets and outlets would be armored with rock, or straw mulched and seeded with grass, to prevent erosion of the road fill slope. Stream diversion potential would be eliminated by dipping the road over the crossing point or in functional proximity (i.e., installation of a critical dip). Where appropriate, the critical dip would be completely rock armored from the pipe outlet to the base of the road fill. Rock armoring would be of sufficient size to remain in place and prevent mobilization of the road fill in the event of an overtopping flow. Unused spoils, perched fill materials, and other sources of observed unstable sediments that could enter a stream would be removed to a stable location outside the stream protection zone or stabilized to the extent feasible to prevent delivery to a watercourse.

On non-fish bearing streams, trash racks would be installed upstream from the culvert inlet when there is a high hazard of floating debris plugging the culvert. On streams with culverts 48 inches in diameter or greater, a sieve would be built across the channel to collect the large material that could otherwise plug the culvert inlet. In these circumstances, trash racks would be located 5 to 25 feet upstream from the culvert inlet. On streams with culverts less than 48 inches in diameter, a vertical post or other suitable structure would be installed in the center of the stream bed upstream of the culvert inlet to minimize the potential for culvert blockage.

Areas requiring soil stabilization would be treated by grass seeding at a minimum rate of 25 lbs/acre and covered (90 percent or greater coverage; 2-inch minimum thickness) with straw mulch or pack slash. Seasonal road surfaces would be shaped and graded to stabilize surface soils and have an outsloped road grade, whenever feasible. All road improvements would have drainage and/or drainage collection and storage facilities installed as soon as practical and prior to either:

1. The start of any rain that causes overland flow across or along the disturbed surface within a Watercourse Protection Zone (WPZ) or within any Equipment Exclusion Zone (EEZ) designated for watercourse or lake protection; or
2. Any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.

As part of the Project, the Applicant would establish a road maintenance association. Road maintenance would involve the upkeep of road cutbanks, road surfaces, fillslopes, and all drainage structures in place to prevent erosion and deterioration of the road prisms. Road maintenance activities would include grading, inboard ditch cleaning, vegetation removal, and culvert cleaning. Additional road maintenance activities would involve the following:

- The LTO would be responsible for road repairs and maintenance on the Project Area during plan implementation and the conversion operations, and the landowner would be responsible for maintenance and any needed road repairs once the harvest project completion report is accepted by CAL FIRE.
- Culverts and crossings in need of replacement or repair would be identified and repairs made when practical and feasible.
- Newly discovered road related failures and slides would be inventoried.
- Emergency repairs would be conducted as quickly as possible and feasible.
- Documentation of inspection results and repairs would be maintained as required by the Erosion Control Plan.

Final Project roads and improvement standards would be determined during the County and CAL FIRE review process. The roads that are part of the Project are projected to be upgraded to a storm-proofed status within the first two years following Project initiation. The proposed schedule for road improvements is as follows:

- Road Construction Phase 1A roads would be upgraded and storm-proofed the first year of operations, and they would access vineyards to be constructed the first year of operations.
- Road Construction Phase 1B roads would be upgraded and storm-proofed the first year of operations, and they would access vineyards to be constructed the second year of operations.
- Road Construction Phase 2 roads would be upgraded and storm-proofed the second year of operations, and they would access vineyards to be constructed the second year of operations.

Refer to the schedule in Section 2.5.3 herein for proposed vineyard development and corresponding road upgrading priorities and schedule for years 1 through 3 following Project initiation.

In addition to the on-site roads, the Applicant represents easement rights to use several private road or access easements, which are not a part of the Applicant's holdings but are relied upon to access the Project Site from nearby public roads and/or to traverse the Project Site. Kelly Road, owned by Kelly Road LLC, is the primary access road not owned by the Applicant. This road runs along the northern margin and through the central portion of the Project Site. The Project does not propose road improvement or maintenance activities for Kelly Road or other private roadways. However, the Applicant would be subject to the terms of any existing road maintenance agreements established for such shared easements.

### **2.3.7 Aggregate Borrow Sites**

Excavation of aggregate material found onsite for use during road improvement operations is proposed by the Project. Since the excavations are not for commercial purposes and are for on-site timber, agriculture, and construction uses only, the borrow sites are not considered surface mines subject to the California Surface Mining and Reclamation Act (SMARA). However, borrow pits associated with timber operations are nevertheless subject to Sections 3704 (f) and 3706 (d) of SMARA. Borrow pits would also require a grading permit from the County.

To date, five primary on-site aggregate borrow sites have been identified and evaluated for Project use (Kleinfelder 2008b). The Applicant currently holds the mineral rights for these sites, including the Bear Ridge, Big Opening, Buckwheat #2, Middle Hoover, and Tabor Buckwheat sites. Five more secondary potential borrow pits are anticipated and considered reasonably foreseeable dependent upon the Applicant’s ability to reach agreements with the holders of mineral rights at these sites. The anticipated aggregate borrow pit site locations and total footprint acreage are provided in Table 2-7 and shown on Figure 2-6. This is subject to change if the Applicant should change the proposed reservoir collection system to sub-surface collection.

Table 2-7. Potential Aggregate Borrow Site Locations and Total Estimated Footprint Acreage

Borrow Site Location	Total Footprint (Acres) / Aggregate Capacity (cubic yards)	Typical Vegetative Cover	Blasting
<b>Secure Mineral Rights</b>			
Bear Ridge	0.22 / 1,707	Exposed bedrock/ruderal vegetation	Not Likely
Big Opening	0.46 / 80,000	Exposed bedrock/ruderal vegetation	Possibly
Buckwheat No. 2	0.03 / 4,133	Exposed bedrock/ruderal vegetation	Not Likely
Middle Hoover	0.07 / 22,430	Exposed bedrock/ruderal vegetation	Not Likely
Tabor Buckwheat	0.01 / 6,544	Oak woodland	Not Likely
<b>Unsecured Mineral Rights</b>			
Moody 2.0 (Lower)	0.05 / 16,726	Exposed bedrock/ruderal vegetation	Not Likely
Moody 2.0 (Upper)	0.06 / 20,111	Exposed bedrock/ruderal vegetation	Not Likely
Oak Ridge	0.04 / 11,993	Oak woodland/grass	Not Likely
School North	0.02 / 3,378	Grass and splings	Not Likely
School South	0.03 / 5,255	Exposed bedrock/ruderal vegetation	Possibly

Each aggregate borrow site would be situated adjacent to or at the end of an unpaved road. The aggregate borrow sites range from 0.01 to 0.46 acre and contain from 3,378 to 80,000 cubic yards (refer to Table 2-5) of estimated aggregate resource. Aggregate excavation would not be conducted during the winter and until a minimum of seven days after significant rainfall events to minimize damage to and wear on existing roads. Three roads on the Property would need improvements to enable access for the heavy equipment that would be needed for aggregate excavation and processing as follows:

- Big Opening: Road 90.2980, currently accessible only on foot
- Middle Hoover: Road 90.8197, currently accessible only by all terrain vehicles (ATVs)
- Moody 2.0 Lower: 2,500 feet of Road 90.9092440113, currently accessible only by ATVs

The starting dates of aggregate excavation for individual aggregate borrow sites would depend on the vineyard and road construction schedule(s). With the exception of the relatively large Big Opening and Bear Ridge aggregate borrow sites, most aggregate borrow sites will be used for adjacent and nearby roads on an as-needed basis. The Bear Ridge and Big Opening aggregate borrow sites have sufficient volumes to supply roads at some distance. Active aggregate excavation operations would likely occur over one to five days for crushing, screening, and stockpiling of aggregate material for each site, depending on the needed volume. The total available estimated volume combined aggregate borrow sites is 172,277 cubic yards.

With the exception of the Big Opening Site, excavation operations would require the temporary closure of the road adjacent to the aggregate borrow site to all traffic. The section of road closed for aggregate excavation operations would be clearly marked. In the first phase of excavation of aggregate resources, vegetation cover, if present, may be removed with a backhoe or excavator. Soil overburden, if present, may also be removed using an excavator or backhoe and stockpiled nearby for use. Expected uses of overburden include use as fill in low spots of roads or building pads or mixing with coarse aggregate. In any case, the stockpiled overburden would not be allowed to remain unprotected during winter months or during rainfall events. In those cases where overburden is not used during the same season for road cover, material would be controlled so that precipitation does not transport sediment to streams or wetlands. Control methods would include moving the soil to flat ground where it cannot be mobilized by runoff or by covering the stockpiled soil with plastic sheeting.

The basic equipment used for aggregate processing includes an excavator or backhoe, a trailer-mounted aggregate crusher, and dump trucks. Most of the aggregate material can be excavated using a backhoe or excavator. However, blasting methods may be necessary for those aggregate borrow sites where the material is too hard to excavate and breakup using an excavator or backhoe. In general, aggregate rock mass rating (RMR) of greater than 60 may require blasting. Only the Big Opening and School South aggregate borrow sites have material that may require blasting. Holes for the placement of the explosives would be drilled using a rock corer. Soil or rock berms would be placed on the edges of any affected steep roads to prevent blasted material from rolling or falling over the sides of the road.

The aggregate would be excavated and placed directly into the front end of the aggregate crusher. The equipment is capable of crushing rock down to 2 inches or less. The aggregate crusher consists of a jaw crusher mounted on a 28-foot long trailer with a diesel power plant on the front of the trailer and a conveyor on the back of the trailer. The conveyor can be raised for dropping the crushed aggregate directly into a dump truck or lowered to place the crushed aggregate directly on the road behind the crusher if the immediate road area is being rockered. In all cases, the processed aggregate would be controlled and not allowed to spill over the sides of steep roads if the aggregate borrow site is adjacent to a steep slope.

For those aggregate borrow sites adjacent to roads on steep slopes, a small berm of aggregate would be placed adjacent to the edge of the road to prevent spillage over the side. Erosion control would be implemented by maintaining the maximum back slope inclination angle modified as needed by actual field conditions. A small, U-shaped ditch filled with coarse gravel and closed at each end would be constructed along the base of the backslope of the borrow site to allow sediment to drop out of runoff. The dimensions of the ditch would be approximately 1 foot wide and 6 inches deep. Runoff collected in the ditch would then overflow out of the ditch under low-energy surface flow conditions, leaving the sediment behind and flowing across the floor of the quarried area as sheetflow to drainage ditches or culverts along the sides of the roads, where present.

The Project proposes reclamation plans for each of the proposed aggregate borrow sites. In general, these reclamation plans include final grading to stable slope configurations and installation of sediment catchment systems at the base of the reclaimed slopes. The areas would be revegetated to match conditions prior to aggregate excavation. With the exception of two borrow sites, the surface of the borrow areas are either exposed bedrock or mantled with shallow

discontinuous soil cover. The Oak Ridge and Tabor-Buckwheat sites currently support vegetation and would be revegetated with grasses.

In summary, according to the Applicant (Kleinfelder 2008), assuming an average road width of 8 feet and a depth of 6 inches, the total estimated aggregate supply available at the ten identified borrow sites on the Project Site (about 172,277 cubic yards) would be adequate for approximately 220 miles of road. However, the application indicates that the improved roadway widths would range between 14 and 18 feet. The required volume for the surfacing of the roads would be on the order of 132,000 cubic yards. The five aggregate borrow pits, for which the Applicant has mineral rights, have an estimated aggregate volume of 114,814 cubic yards. The remaining identified five aggregate pits have an additional volume of 57,463 cubic yards of aggregate supply. An additional undetermined volume of aggregate supply would be needed for construction of housing units, stormwater collection systems, and other improvements. Therefore, the Project would apparently need to secure the mineral rights to the additional five borrow sites, identify additional on-site borrow areas, or import aggregate from off-site sources to meet the aggregate demand.

### 2.3.8 Carbon Storage and Sequestration

As part of the Project, the Applicant seeks to fully offset greenhouse gas (GHG) emissions throughout the life of the Project, and to significantly increase the Property's carbon sequestration potential over time, as the proposed working forest and conservation easements, park expansion, and restoration benefits are realized. The Project proposes the conversion of 9 percent of the Property to vineyard and the restoration, preservation, and management of over 90 percent of the Property in a manner that is estimated to increase carbon dioxide (CO<sub>2</sub>)<sup>5</sup> sequestration rates and storage capacity for the future. As part of the Project, the Applicant would seek to be carbon neutral by offsetting all GHG emissions related to the proposed conversion of forest to vineyard while concurrently implementing working forest and conservation easements, park expansion, and restoration actions that would increase the Property's carbon sequestration over time.

The forest restoration component (and forest management practices) of the Project (as described in Sections 2.4.6 and 2.4.7) has been proposed to promote the beneficial effects of conserving energy and offsetting GHG emissions (by increasing the levels of carbon storage) and reducing overall fire hazard.

In the short term (15 to 20 years), the Project is expected to decrease carbon storage levels due to the conversion of timberland and the reduced levels of tanoak due to forest restoration. For the purpose of off-setting the shorter-term effects on carbon storage, the Applicant has indicated that carbon credits would be purchased. According to the analysis presented with the application, over the long term (20+ years and ongoing), the Project would generate increased levels of carbon storage over the even-age baseline projections due to increased growth from restoration practices. Additionally, the analysis suggests that by preventing commercial harvest of forests within the Windy Gap Wildlife Preserve will increase carbon storage as those forests mature,

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<sup>5</sup> GHGs are measured in carbon dioxide (CO<sub>2</sub>) equivalent units. The principal GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (NO<sub>x</sub>), ozone, and water vapor. Because CO<sub>2</sub> is the reference gas for climate change, GHG measures are converted into CO<sub>2</sub>-equivalent values based on their potential to absorb heat in the atmosphere. For instance, CH<sub>4</sub> traps 23 times the amount of heat per molecule as CO<sub>2</sub>; therefore, one pound of CH<sub>4</sub> has a CO<sub>2</sub>-equivalent value of 23 pounds.

resulting in an offset of GHG emissions over the first 50-year period. Change in carbon stocks as a result of implementing the proposed forest management practices of the Project (as presented in Appendix C of the Applicant's Project Description document) illustrates this comparison.

#### CALIFORNIA CLIMATE ACTION REGISTRY

As part of the Project, the Applicant intends to seek California Climate Action Registry (CCAR) registration. The CCAR is a California-based, private, non-profit organization that serves as a voluntary GHG registry to protect and promote early actions to reduce GHG emissions. The CCAR provides leadership on climate change by developing and promoting credible, accurate, and consistent GHG reporting standards and tools for organizations to measure, monitor, third-party verify, and reduce their GHG emissions. The CCAR is attempting to consistently evaluate GHG emissions across industry sectors and geographical borders. The CCAR has also developed Forest Protocols for determining GHG baselines and for tracking GHG emissions and reductions. The Applicant intends to register and develop its GHG baseline pursuant to CCAR protocols and use the information in determining any necessary GHG offsets to assist during the CEQA process.

### 2.3.9 Project Related Activities

#### SUSTAINABLE TIMBER MANAGEMENT

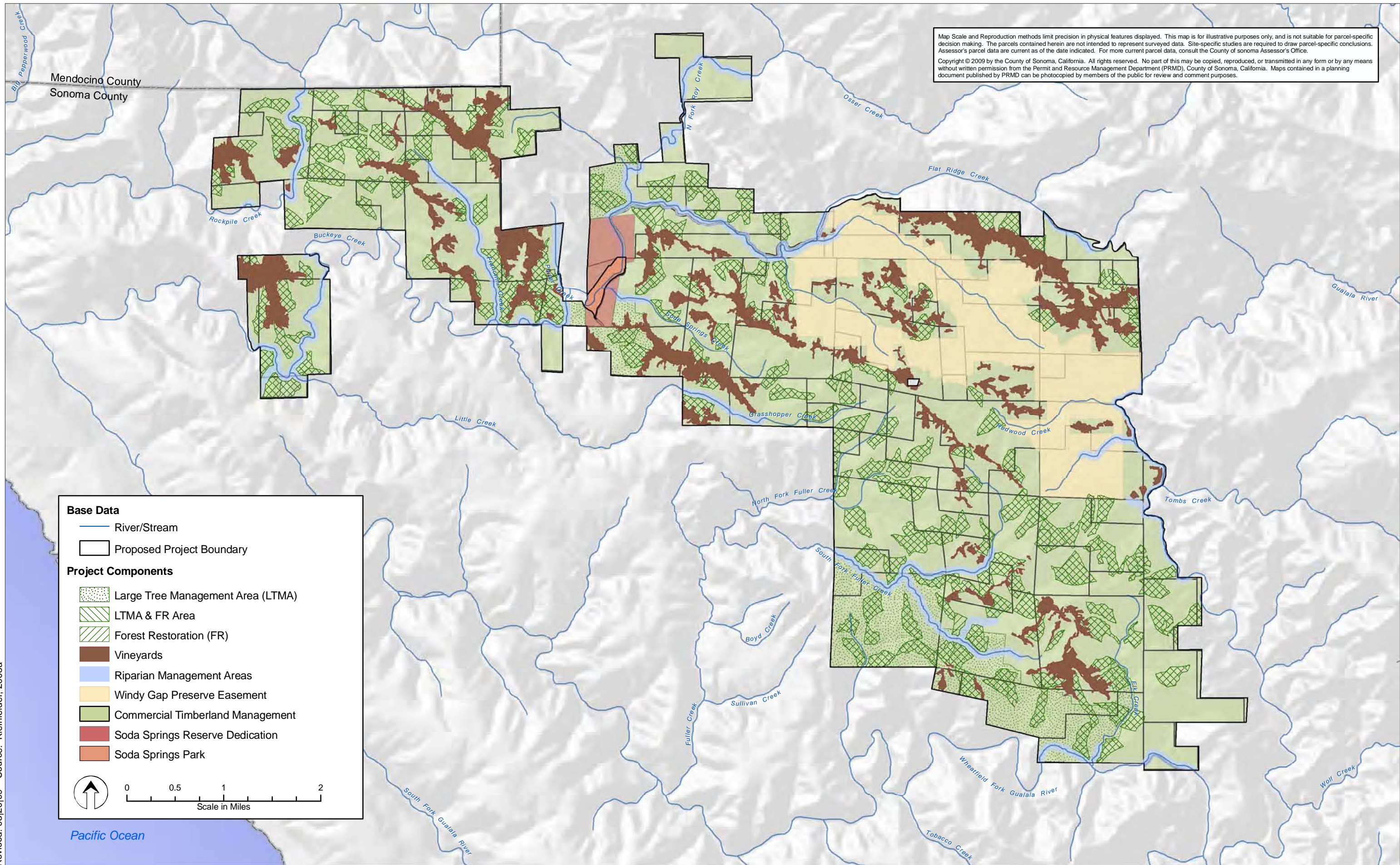
The Project proposes to protect and manage approximately 15,000 acres of timber resources (Figure 2-7). The Sustainable Timber Management Plan (Plan) for the Project includes the following key components summarized below: (1) "One Forest" conservation easement; (2) Forest Restoration; (3) Commercial Timberland Management Areas; (4) Riparian Management Areas; and (5) Large Tree Management Areas. The common goals for each of the sustainable timber management components are to improve the timber resource and increase high quality timber products, enhance wildlife habitat, reduce fire hazard, increase carbon storage and increase local employment. Each component is proposed to be enforced via a conservation easement or working forest easement.

#### "ONE FOREST" CONCEPT/CONSERVATION EASEMENT

The "One Forest" concept would utilize a single management entity, the Preservation Ranch Forest Group (Forest Group), to control and manage the entire 14,590 acres of Sustainable Timber Management Area that extends across most of the proposed 63 parcels, in perpetuity. This approach allows multiple ownerships throughout the Project Site while inhibiting fragmentation of the timber resources and wildlife and fisheries habitat across the Project Site. Under the easement, the timber rights and timber management would remain under the control of the Forest Group as opposed to the potential individual property owners. This management structure would ensure that Preservation Ranch would be subject to environmentally protective forestry restrictions applied uniformly across the landscape.

Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to draw parcel-specific conclusions. Assessor's parcel data are current as of the date indicated. For more current parcel data, consult the County of Sonoma Assessor's Office.

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**Base Data**

- River/Stream
- Proposed Project Boundary

**Project Components**

- Large Tree Management Area (LTMA)
- LTMA & FR Area
- Forest Restoration (FR)
- Vineyards
- Riparian Management Areas
- Windy Gap Preserve Easement
- Commercial Timberland Management
- Soda Springs Reserve Dedication
- Soda Springs Park

0 0.5 1 2  
Scale in Miles

Revised: 03/20/09 Source: Kleinfelder, 2008a



A working forest conservation easement would be secured for the 14,590 acres of the Sustainable Timber Management Area to ensure that the Applicant's conservation goals are carried out in perpetuity. Some of these goals include:

- Sustainable management of the forest resources using uneven aged-management techniques;
- Broadened riparian management areas;
- Management for large trees; and
- Third-party monitoring.

The working forest conservation easement and timber management plan would require close coordination between the eventual property owners who purchase the fee title to the individual parcels and the Forest Group. The concept would also establish a legal vehicle to limit the potential interference between timber and agricultural operations.

#### FOREST RESTORATION

As part of the Project, approximately 1 million conifers would be planted throughout the Project Site to restore approximately 3,738 acres of timberlands currently experiencing artificially high tanoak competition using proven forest restoration techniques (Figure 2-7). It should be noted that the proposed forest restoration acreage is not required to meet the County's 2:1 mitigation requirement for timberland conversion but is proposed in addition to Ordinance 5651 mitigation requirements.

The forest restoration actions proposed involve two main processes: vegetation control using Integrated Vegetation Management (IVM) methods and replanting with native conifers (estimated at over 1 million seedlings). Forest restoration would occur concurrently with vineyard development at an average of 2.2 acres of restoration for every 1 acre of timber conversion. The forest restoration actions would occur over a three- to five-year period in coordination with proposed timber conversion and vineyard development activities. These actions are intended to reduce the potential for losses from seedling mortality in exceedingly dry years and to reduce potential short-term environmental impacts. Restoration areas would be distributed across the Project Site and buffered by untreated areas to also reduce potential short-term impacts due to the change in vegetation from these stand improvement practices.

The Project would be using an IVM approach to effectively manage competing tanoak vegetation on the Project Site. In the case of tanoak control, eradication is not a goal of the IVM strategy. Rather, the proposed approach is to reduce tanoak levels in the conifer overstory and return the species to an understory or middlestory position. Different tactics are available for effectively controlling tanoak including cultural, biological, and/or chemical strategies. The proposed IVM alternative methods analyzed for the Project were manual cutting, prescribed burning, and chemical frilling<sup>6</sup>. After reviewing the effectiveness, worker safety, cost and environmental impacts of these three methods, frilling has been determined to best meet the objectives of tanoak control for the Project.

<sup>6</sup> Frilling is a chemical control application method where selected tanoak trees are treated and left standing to die and decompose. The low toxicity herbicide Imazapyr™ is used with this method to control tanoak.

Frilling of site-specific tanoak trees with a low toxicity herbicide (Imazypyr™) allows the most effective control of unwanted vegetation and is an environmentally safe method when properly applied. Frilling prescriptions would treat specific tanoak trees only, with appropriate buffers along watercourses. Within treatment blocks, which range anywhere from 10 to 40 acres in size, approximately 10 percent of the area and tanoak trees over 18 to 20 inches in diameter would not be treated. This practice is proposed to retain wildlife habitat values of structure and tanoak mast, a possible food source, and would result in retention of approximately 25 square feet/basal area of hardwoods, including tanoak after frilling treatment.

Frilling of tanoak on the Project Site would be conducted by a Licensed Pesticide Applicator under the advisement of a Pest Control Recommendation from a Licensed Pesticide Advisor following label directions and precautions. Imazypyr™, applied as per label restrictions, is a Caution-level herbicide. The most undiluted formulation of the herbicide is classified as Class IV on EPA's scale of short-term toxicity of I (being most toxic) to IV (being least toxic). On average, 1-quart/acre of Imazypyr™ is used per tree for controlling tanoak with frilling. Application can be performed relatively quickly and efficiently with one trained applicator treating approximately 2 acres per day.

Areas where tanoak is controlled by frilling or effectively reduced by SOD would be replanted (at a rate of 200 – 400 trees/acre) with conifers from the appropriate seed zones during the first or second winter season after tanoak treatment. Seedlings include redwood, Douglas fir, and sugar pine trees. The Project estimates that over 1 million seedlings would be planted as part of the forest restoration actions of the Project.

#### COMMERCIAL TIMBERLAND MANAGEMENT

The Commercial Timberland Management Areas would cover approximately 11,355 acres of the approximately 14,590-acre Sustainable Timber Management Area on the Project Site (Figure 2-7). The Commercial Timberland Management Areas are proposed to be zoned TP with the primary objective of preservation and enhancement of commercial timberland by restricting future timberland conversion and requiring commercial timber sustainability and productivity. The management of these areas would be enforced via the One Forest Concept conservation easement restrictions. The timber would be managed as a single forest. Future timber harvest activities would be required to implement sustained yield and uneven-aged timber management, as well as timberland conversion limitations.

The 2006 existing timber inventory data indicates that the Project Site has generally low stocking of currently merchantable redwood and Douglas fir saw timber (less than 12-inches dbh). Despite the fact that approximately 70 percent of the timberland on the Project Site currently meets or exceeds BOF conifer stocking requirements, other factors such as tanoak competition for sunlight, water, and space limit the young conifers ability to grow now and in the immediate future. Present inventory levels are significantly below “well stocked” levels for Site Class III timberland, the predominant timber site class on the Project Site. Currently, 73 percent of the conifer tree volume on the Project Site is in trees less than 24 inches dbh. A well stocked and managed forest of this age should contain four times this level or an average of 24,000 board feet/acre of conifers with

growth rates averaging 750 board feet/acre/year across the Site, as opposed to the current 5,880 board feet/acre and 336 board feet/year growth.

“Uneven aged management” as defined by the California Forest Practice Act (Article 7.5 CCF 4593.2) means the management of a specific forest with the goal of establishing a well stocked stand of various age classes. This management permits the periodic harvest of individual or small groups of trees to realize a yield while continuing establishing a new crop. Uneven-aged management requires that trees of all size and age classes are continuously present throughout the forest and uses selective harvesting rather than clear-cutting methods to regenerate timber stands. Single trees or small groups of trees are harvested, and harvest areas are restocked with seedlings (fall and/or planted) to reach optimum stocking levels. The benefit of uneven aged management is derived from retaining aesthetic values and wildlife habitat structure on every forest stand that is managed. However, management costs can be higher and less total timber volume is typically produced than with the even aged clear cut harvest system.

“Sustained yield” is defined as limiting the yield of commercial wood that an area of commercial timberland can produce continuously at a given intensity of management to that consistent with required environmental protections and that achieves a balance between growth and harvest over time. The time period measuring the balance between growth and removal would not be greater than 10 years. Additionally, there would be a requirement for harvest levels to be less than or equal to 90 percent of growth for a minimum of 60 years, at which point harvest may be balanced but would not exceed growth. These restrictions should increase inventory levels over time and would be enforced with a restrictive easement on each parcel.

#### RIPARIAN MANAGEMENT AREAS

The Project proposes establishment of Riparian Management Areas (RMAs) encompassing about 1,635 acres of the 14,590-acre Sustainable Timber Management Area on the Project Site (Figure 2-7). Creation of the RMAs has been proposed as part of the Project to foster the growth of a large tree forest in riparian areas on the Site. The establishment of RMAs is intended to benefit the federally-protected steelhead (*Oncorhynchus mykiss*) and other aquatic species by providing increased canopy cover (i.e., shade to reduce stream water temperatures). Additionally, the RMAs may promote future inputs of large woody debris to the streams, which can improve stream structure through the formation of deeper pools that provide shelter from predators. The proposed RMAs would afford added protection to all Class I<sup>6</sup> fish bearing watercourses on the Project Site (a total of 29.1 miles).

The California FPRs, Section 936.4, define watercourse classifications and the corresponding standard protection measures for timber harvesting activities. Any future timber activities in the proposed RMAs would be designed and constrained to meet the following riparian objectives as stated in the California Salmonid Stream Habitat Restoration Manual (NMFS 2001):

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<sup>6</sup> Class I watercourses are defined under the FPRs as stream having fish always or seasonally present onsite and that include habitat to sustain fish migration and spawning.

- Controlling the amount of light reaching the stream that affects temperature and productivity;
- Providing litter and invertebrate fall;
- Promoting stream bank stability;
- Buffering impacts from adjacent uplands; and
- Providing large woody debris for recruitment to channels.

All Class I (fish bearing) watercourses on the Project Site (i.e., Rockpile Creek, Buckeye Creek, Fuller Creek, and Wheatfield Fork) would be protected in exceedance of the current BOF general requirements that mandate a 300-foot (150-foot each side) WLPZ for Class I watercourses and 100-foot for Class II watercourses within the Gualala River watershed. The Project proposes permanent 200-foot zones (400-foot total) on each side of Class I watercourses (measured on the side slope from the edge of the riparian vegetation). The additional 100 feet of riparian protection and more controlled timber management objectives within the RMA are proposed to protect and improve riparian habitat within the Site. The larger zone created would also provide the riparian forest areas on the Project Site with greater buffering against the potential affects of future adjacent commercial timber management practices and would effectively create an area managed to grow large trees. The RMA would eventually create an overstory of widely spaced large trees (over 40 inches dbh) with a greater diversity of canopy structure and greater diversity of species of hardwood and shrubs growing in the middle and understories relative to current conditions.

Rockpile Creek, Buckeye Creek, Fuller Creek, and the Wheatfield Fork are all large tributaries of the Gualala River and are considered Class I fish bearing watercourses pursuant to the California FPRs. Each of these watercourses bisects the Project Site and provides suitable habitat for steelhead and other aquatic species. The primary objective of establishment of the RMAs is managing these riparian forests to improve habitat for all fish and wildlife species, specifically for the threatened steelhead trout that are present in some of the watersheds on the Project Site, as well as the threatened coho salmon found downstream from Project Site.

Additionally, the 400-foot RMA (200 feet per side) would be protected by restrictive easements that require BMPs consistent with the current BOF Threatened and Impaired Watercourse FPRs (Rules) (14 CCR 916.9(g)). These Rules include provisions that require retention of high near-stream canopy levels. RMA management practices would allow silvicultural treatments providing for light selective thinning of conifers and competing tanoak hardwoods to encourage growth of larger diameter conifer trees. The activities would be required to comply with all the restrictions related to WLPZs, including those pertaining to protection of “sensitive” watersheds and “watersheds with threatened or impaired values” (14 CCR 916.9, 939.9, and 956.9). These larger trees would eventually fall over and/or into the watercourses and would be more effectively anchored in streams than the current small densely spaced trees. A provision for adaptive management would also be included in the restrictive easements to conform with the most current FPRs regarding canopy retention levels. Timber conversions would also be prohibited in the RMA via the restrictive easement.

### LARGE TREE MANAGEMENT AREAS

The Project proposes establishment of two Large Tree Management Areas (LTMAs); Elk Creek LTMA and Buckeye Creek LTMA. The LTMAs encompass approximately 1,878 acres out of the approximately 14,590-acre Sustainable Timber Management Area (refer to Figure 2-7). Within the LTMAs, large redwood, Douglas fir and sugar pine trees would be grown and selectively retained. These areas are strategically located contiguous to two adjacent old growth redwood reserves at Soda Springs Reserve Park and a private property straddling the Wheatfield Fork that is permanently protected by a Sonoma County Agriculture Preserve and Open Space District Forever Wild conservation easement.

The Buckeye Creek LTMA is approximately 351 acres in size and is located within the parcels that adjoin the 40-acre Soda Springs Reserve Park (Reserve) and the approximately 221-acre park dedication proposed by the Project. The Buckeye Creek LTMA also borders a significant stretch of Buckeye Creek (Figure 2-7).

The Elk Creek LTMA is approximately 1,527 acres in size and is located within parcels that are contiguous to a large private property parcel containing an old growth redwood forest protected by a Sonoma County Agriculture Preserve and Open Space District Forever Wild conservation easement. This LTMA also borders a significant stretch of the Wheatfield fork of the Gualala River.

The LTMAs would be managed over time via restrictive easements to retain larger trees and old forest characteristics. The management is proposed to improve the biodiversity of wildlife and fisheries habitat on the Property, create forests that are resistant to catastrophic wildfires thereby reducing fire risk, increase carbon storage, and provide aesthetic values that are commonly associated with older forests. The management would also allow sustainable harvesting of high quality timber products.

The LTMA's conservation easement restrictions would include large tree retention and snag and downed wood retention components as follows:

- At least eight conifer trees/acre, or a minimum of 40 square feet of basal area/acre, would be retained after harvest of the trees in the top size classes that are present prior to harvest (upper 30 percent of size classes over 18 inches dbh) until the large tree retention goal of six trees/acre 32 to 39 inches dbh, and two trees/acre 40 inches dbh and greater is attained.
- A minimum of three conifer snags/acre greater than 24 inches dbh, and a minimum of ten downed conifer logs/acre equal to or greater than 24 inches in diameter and a minimum of 10 feet in length would be retained after harvest.

The LTMAs are intended to compensate for the loss of wildlife habitat on the timber conversion areas by improving the existing forest habitat within these areas as well as expanding areas of contiguous habitat. Creation of these LTMAs would increase habitat for wildlife that are dependent on or use large trees for nesting, roosting and cover. In addition, when the large trees die and fall over they would provide snags and large diameter downed logs, which are typically found in old growth forests in the region and provide high quality habitat for birds, mammals, reptiles, and amphibians.

#### STREAM HABITAT RESTORATION

The Project proposes to support on-going efforts by the Gualala River Watershed Council (GRWC) to improve fisheries' habitat within the Gualala River watershed through the installation of large woody debris in select locations. The strategic placement of large pieces of wood within stream channels provides for increased salmonid habitat complexity, including pool development. Following award of grant funding by the CDFG Senate Bill (SB) 271 program in 2000, the GRWC established the Gualala River "Wood in the Stream Project." Under this program, the GRWC has installed over 500 logs in nine streams throughout the watershed.

The Project proposes to support the program in two ways. First, the Project proposes to supply the program with large wood consisting of redwood and Douglas fir stumps and cull logs generated during tree removal for vineyard development. The stumps and logs would be stored within the Preservation Ranch Project Site at locations to be determined. Approximately 500 pieces would be stored and made available to GRWC; however, the number of pieces may be increased or decreased depending on need. The proposed support does not specify the location or design of large wood installations, which would be determined under the GRWC program.

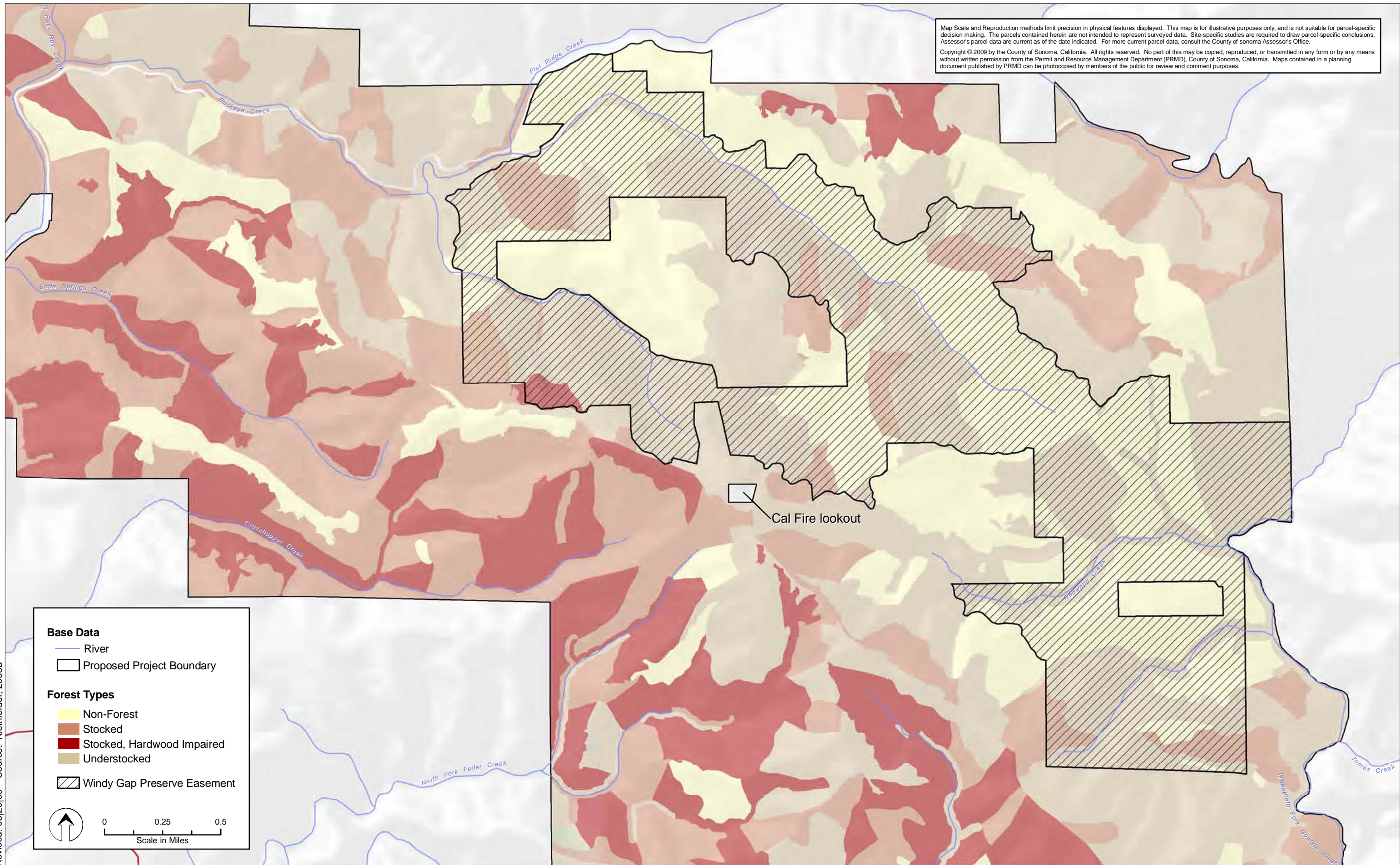
The second form of support for the GRWC "Wood in the Stream Project" would be to provide \$250,000 of funding for continued implementation of the GRWC project within the Project Site. The funding could be used by GRWC to meet "cost share" requirements for grant funding by the SB271 program or to continue large wood installation when grant monies are not available.

#### WINDY GAP PRESERVE EASEMENT

The Project proposes the creation of an approximately 2,702-acre forest easement called the Windy Gap Preserve (Preserve) (Figure 2-8). The conservation easement would ensure that the Preserve is managed and protected in perpetuity from commercial timber operations and new development but would allow for habitat restoration activities.

The Preserve connects the Buckeye Creek and the Wheatfield Fork watersheds. The Preserve spans an ecozone between the cooler, wetter coastal vegetation types (dominated by redwoods, bay, maple, and tanoak) and the hotter, drier interior vegetation types (dominated by oak woodlands/savanna/grasslands, and Douglas fir forests). The configuration of the Preserve is proposed to improve habitat diversity and connectivity.

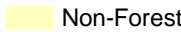




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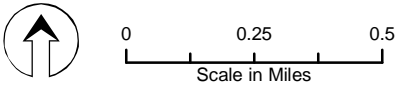


**Base Data**

-  River
-  Proposed Project Boundary

**Forest Types**

-  Non-Forest
-  Stocked
-  Stocked, Hardwood Impaired
-  Understocked
-  Windy Gap Preserve Easement



Revised: 03/20/09 Source: Kleinfelder, 2008a



The goals for creation and management of Windy Gap Preserve are as follows:

- Create a permanent wildlife preserve that provides high quality habitat for native species;
- Provide a wildlife migration corridor across the Project Site, connecting the Buckeye Creek and Wheatfield Fork watersheds;
- Maintain the quality and functionality of wildlife habitat on the Preserve, particularly the continued viability and health of the oak woodland ecosystems; and
- Provide opportunities for research into effectiveness of forest and stream restoration practices in cooperation with local groups.

In addition to the 2,702-acre Preserve, the conservation easement also calls for the establishment of an Oak Woodland Management Area (OWMA) for the 1,000 acres of oak woodland contained within the Preserve. The primary goal of establishment of the OWMA is to maximize vegetative biodiversity and increase the quality of wildlife habitat. The OWMA would be managed by an Oak Woodland Management and Conservation Plan (OWMC) created by oak woodland ecologists pursuant to the Windy Gap Preserve easement. Potential treatments include the cutting of invading trees (i.e., Douglas fir) that are not yet of merchantable size. Cut trees would then be bucked into shorter lengths to reduce fire hazard and left to biodegrade. The OWMA would undergo periodic surveys and inventories with adaptive management procedures instituted to control conifer invasion and maintain oak composition.

#### SODA SPRINGS RESERVE DEDICATION AND PUBLIC TRAIL

The Project proposes to expand the existing 40-acre Soda Springs Reserve (Reserve) with the donation of 221 acres of land surrounding the Reserve (refer to Figure 2-7). The two parcels of land to be donated are located to the north and south of the Reserve and would create a larger buffer to the existing old-growth redwood forest on the existing Reserve. The northern addition includes land on both sides of the main fork of Buckeye Creek. These parcels would be offered for dedication in fee to the county of Sonoma for the purposes of expanding the existing Reserve.

In addition to the dedication of 221 acres, the Project proposes to provide a new public trail easement that would allow for the development of an approximately 5-mile loop trail accessible from the existing Soda County Reserve Park. The Project does not propose any other specific improvements for the Reserve.