Letter 8

Community Clean Water Institute
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August 7th, 2009

Allen Robertson, Deputy Chief
Environmental Protection
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 944244-2460

Dear Allen Robertson,

Community Clean Water Institute requests that the California Department of Forestry and Fire Protection consider these comments upon review of the draft Environmental Impact Report for the Fairfax Conversion Project.

8-1 We urge CDF to regard the cumulative water quality and quantity impacts the Fairfax Conversion Project will have on the Gualala River watershed. The DEIR cannot be assessed from a piecemeal approach and impacts must be expected to accumulate and be considered in a regional context where many forest-to-vineyard conversions are occurring. Approval of the proposed Fairfax Conversion Project will cause further depredation of the already drought impacted and federally listed Gualala River watershed, which contains federally listed salmonid species.

The Gualala River is currently on the federal Clean Water Act Section 303(d) list due to impairment and/or threat of impairment to water quality by sediment. This proposed conversion will increase sediment runoff, as well as other pollutant runoff and raise surface water temperatures, and **is therefore in direct conflict with the protections enforced by the Clean Water Act.**

8-2 How can we allow for more forested land to be converted to agriculture, especially vineyards? Especially when the proposed conversion is within the watershed of a federally listed river! Do we need to be reminded of how much damage a clearcut causes? Trees and other vegetation help receive, absorb, and store rain water as it percolates through the soil. Severe erosion can occur on steep forested land and soil compaction on any land during the conversion process. The soil begins to lose its absorption and filtration abilities and any sediment and herbicides, and eventually fertilizers or pesticides used to establish and maintain aquiculture, runs off directly into the stream.

8-3 Perennial streams can be completely dependent on groundwater for baseflow during dry years making the act of clearcutting especially harmful. As vegetative cover is removed, the soil loses it absorption capabilities and results in a lowered ground water table. The lack of ground and surface water is obviously extremely deleterious for aquatic life but is also a stressor for trees and vegetation outside the clear cut zone.

8-4 We question the level of significance given to Project Impacts 3.4 (12-14) of the draft EIR and strongly feel that these are prime examples of this DEIR's tendency toward short term piecemeal analysis and solutions. **Impacts 3.4-12 & 14 cannot be viewed as separate impacts for minimum instream flows must be maintained to prevent further increases in surface**

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8-4 Cont'd

water temperatures, and the level of significance of these impacts on the Gualala River Watershed will only heighten with time.

8-5

Project Impact 3.4-13 states that Impacts to special-status salmonids from project-related increases in peak flows will be less than significant and therefore mitigation measures are not required. This conclusion is hard to agree with as compacted soil that is less pervious will cause extreme peak flows during winter storms.
Community Clean Water Institute asks that you take these observations into account and deny the Fairfax Conversion Project DEIR as it is written.

Sincerely,

Terrance Fleming
Community Clean Water Institute

LETTER 8: TERRANCE FLEMING – COMMUNITY CLEAN WATER INSTITUTE

Response to Comment 8-1

As noted in Response to Comment 12-7, the proposed reservoir on the project site is designed to collect stormwater runoff from the surrounding Patchett Creek watershed during the winter rainy season, after significant rains have saturated soils and excess water is flowing in downhill directions. The project would capture runoff from only 39 acres (approximately 4 percent) of the 1,124-acre Patchett Creek watershed. Patchett Creek is a tributary of the Wheatfield Fork of the Gualala River, which has a drainage area of about 111 square miles. The project area occupies about 0.6% of the Wheatfield Fork watershed, and the Patchett Creek watershed contributes about 1.6% of the Wheatfield Fork watershed. Potential impacts to steelhead and other native fish species downstream of the project site would be minimal to none as collection of runoff would occur when flows are seasonally high and water temperatures low and within the preferred range for steelhead.

Based on the analytical studies conducted on hydrology and sediment control, the project may improve water quality conditions above existing conditions by reducing erosion and increasing summer baseflow through an increase in groundwater recharge. Any increase in summer baseflows would help maintain cooler water and enhance habitat which is beneficial to steelhead at this time of year.

Within the Gualala watershed, stream flow regimes, depth, width, temperature, and sediment loading have changed over time and are linked to previous and current land use developments. The literature available in the KRIS Gualala database strongly supports a "cause and effect" relationship between watershed development and changes in the aquatic habitat and fish species composition. It must be emphasized, however, that the magnitude of perturbations to the aquatic ecosystem resulting from previous, and potentially improper, development in the watershed that led to significant changes in habitat conditions are not associated with this project. CEQA does not require the Fairfax Conversion project to mitigate for past practices. Notwithstanding the above, it is important to recognize that it is the combination of past and current land use practices that has created the current environmental conditions within the watershed. These current environmental conditions serve as the baseline conditions for the project hydrology and erosion analyses. Erosion processes and rates in the Patchett Creek watershed have been comprehensively assessed in the DEIR in Section 3.7, *Hydrology and Water Quality*, and DEIR Appendices M and N, including off-site vineyards and commercial forest land in the Patchett Creek watershed (see Chapter 2, *Revisions to the DEIR Text*, of this Final EIR for the changes made to Chapter 3.7 of the DEIR and the Hydrologic and Erosion Analyses prepared for the project since the release of the DEIR for public review). Erosion processes and rates were analyzed in the sediment TMDL framework developed by the North Coast Regional Water Quality Control Board, and potential project effects on erosion and sedimentation in the Patchett Creek watershed were quantitatively analyzed in relation to the TMDL desired future conditions to evaluate proposed mitigation.

The proposed project has been designed with state of the art Best Management Practices (BMPs) that will significantly control both project erosion and mobile sediment contribution to downstream environments. For example, project sedimentation basins as designed are predicted to reduce sediment yield by 50 percent, primarily by capturing sand and fine gravel greater than

0.1 mm diameter. Finer suspended sediment that passes through the sediment basins is relatively mobile in energetic stream systems such as Patchett Creek. Most of the sediment from the project site, following treatment in sedimentation basins, is expected to remain in the water column as the sediment is transported through Patchett Creek with relatively little deposition. As shown in Table 3.7-20 of the DEIR, the sedimentation basins (and the reservoir collection system) reduce the predicted increase in sediment yield of about 5 to 7 t/yr to a net decrease of about 8 to 13 t/yr. There is an estimated net decrease at the project area boundary draining to Patchett Creek of approximately 10 to 13 percent. Additional reductions in sediment yield by erosion mitigation designed to repair and control gully erosion at five sites in the project area is expected to reduce erosion rates by at least 16 t/yr (low range estimates) to 27 t/yr (high range estimates). These estimated sediment savings result in net decreases in sediment yield under project conditions of 24 to 39 t/yr.

The DEIR identifies specific mitigation measures to avoid and/or minimize impacts to water quality and quantity. For example, in addition to the requirement for all timber harvesting activities on the project site, including harvest-associated road construction and maintenance, to comply with California Forest Practice Rules water quality protection measures, as described in the Timber Harvest Plan prepared for the proposed project and approved by the Department of Forestry and Fire Protection (cf. MM 3.7-2(a)), the DEIR also requires the project applicant to implement a detailed Post-construction Monitoring Plan that supplements the project ECP and SWPPP for the first winter season after project construction (cf. MM 3.7-2(i)). This monitoring plan shall be implemented for areas where site preparation has occurred in the prior construction season, including soil preparation, grading and drainage installation. The first-year post-construction monitoring requirement is fulfilled if the monitoring period follows all grading and drainage work, regardless of whether vineyard planting and cover crops have been established. If site preparation work is conducted, but final grading and drainage installation is not complete, this monitoring plan will extend to the subsequent winter until final grading and drainage work is complete. In addition, per Mitigation Measure 3.7-3(b), the DEIR requires a detailed Channel Erosion and Sedimentation Basin Monitoring Plan to be implemented by the project applicant. As stated in Mitigation Measure 3.7-3(b), there is no substantial evidence that hydrologic change will cause significant erosion in Class III channels draining the project area. Channel response to peak flows is controlled by the size of channels, channel substrate, and the proximity of bedrock and boulder controlled channels downstream. Grant et al. (2008) state that peak flow effects on channel morphology should be confined to stream reaches where channel gradients are less than approximately 0.02 (2 percent) and the streambeds are composed of gravel and finer material.[27] Potential erosion of channels draining the project area is limited to varying degrees by these factors. Furthermore, peak discharge for high-magnitude, low-frequency flows (> 5 yr recurrence interval events) under current conditions indicate that the largest increases in peak flows (2 yr recurrence interval events) predicted under project conditions would be well within the range of flows transmitted by the existing channels in most locations. Hence, the potential for significant channel erosion related to peak flow change is limited by several factors.

[27] Grant, G.E., S.L. Lewis, F.J. Swanson, J.H. Cissel, J.J. McDonnell. 2008. *Effects of forest practices on peak flows and consequent channel response: a state-of-science report for western Oregon and Washington*. Gen. Tech. Rep. PNW-GTR-760. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 76 p.

Given the relatively high variability and complexity of hydrologic and geomorphic processes, channel response to identified potential peak flow increases is somewhat uncertain. While the predictable potential effects of the project with mitigation are not significant, unpredictable events or unexpected responses could have substantial impacts. Consequently, a monitoring program is presented in this mitigation measure. The objective of the monitoring plan is to observe and document erosion response, if any, of Class III channels draining the project area and verify that the magnitude of response does not rise to a significant level. No net increase in sediment yield from the project area is an environmental objective of the project. Central to the monitoring plan is the concept of adaptive management (See more discussion on this in the "Adaptive Management" section below). If monitoring data indicate that sediment yields from the project area are greater than predicted in the pre-project analyses, either from unexpected erosion of Class III channels or higher-than expected delivery rates of sediment eroded from vineyard fields, appropriate on- and off-site erosion mitigation will be developed with oversight by CAL FIRE or an alternative regulatory authority designated by CAL FIRE.

As explained above, the Erosion Analysis concluded that the project (with BMPs) is expected to reduce sediment yields by 24 to 39 t/yr. The specific objective of this monitoring plan is to determine whether potential increases in sediment yield associated with accelerated channel erosion are less than 24 to 39 t/yr. In addition, the performance of sedimentation basins will be monitored to provide measurements of vineyard field erosion and sedimentation basin trapping efficiency. These measurements are warranted because they could lead to revisions of predicted vineyard field erosion, which could either increase or decrease the threshold of significance of channel erosion. The monitoring plan has three components:

1. Detailed topographic surveys of selected channels;
2. Annual survey of erosion of "sensitive" channels; and
3. Survey of selected sedimentation basins.

Topographic Surveys of Selected Class III Channel Reaches

This element of the monitoring plan would include detailed topographic surveys using a total survey station to measure changes in channel elevation for sample sections of selected Class III stream channels. This study approach has been previously implemented by O'Connor Environmental for Class III streams in Humboldt County to fulfill monitoring requirements of the Pacific Lumber Company Habitat Conservation Plan. The strength of this approach is that it develops accurate, objective quantitative data documenting the dimensions and elevation of channels before the project and three years after project completion. This will provide statistical measures (using parametric techniques), of channel erosion rates that can be extrapolated to assess the magnitude of channel erosion in the project area. The study will be designed so that a range of hydrologic change is observed that will indicate whether peak flow change is correlated with channel erosion rate. Specifically, six channels (2, 20, 31, 40, 45B and 60A; see Hydrologic Analysis, Figure 6, for locations of these channels, and Table 6 for the magnitude of expected peak flow change) would be monitored to determine erosion rates over a 3-year period.

Annual Surveys of Class III Channels

This annual survey would be conducted for the 18 channels considered to be moderately sensitive to peak flow (Hydrologic Analysis, Table 12). The survey technique to be employed would systematically observe and measure the surface area and depth of fresh channel and bank erosion features as a measure of annual erosion rates. This technique, while objective, requires field estimates that have only moderate levels of precision. The advantage of this approach is that it allows for broad coverage of the monitoring sites and is likely to detect significant changes in the rates of channel and bank erosion. Statistical tests for change would most likely utilize techniques for non-parametric data. These surveys would be conducted four times: once prior to project implementation to document baseline conditions, and then annually in late winter/early spring when annual erosion features are relatively easy to detect and measure. These annual surveys developed over a broad project area are also important in that they would likely detect unexpected rates of change in a time frame that would allow for timely response, if necessary.

Annual Surveys of Selected Sedimentation Basins

This annual survey would measure the volume of accumulated sediment and the grain size distribution of accumulated sediment in a sample of about 25% of the sedimentation basins in the project. By comparison to grain size distribution of the vineyard soils, the deposited sediment size distribution and volume can be used to estimate the erosion rate of the vineyard fields and the sedimentation basin trapping efficiency (see Reid and Dunne, 1996, Rapid Evaluation of Sediment Budgets, p. 49). The monitoring would be comprised of annual measurements of depth of accumulated sediment in selected basins and collection and laboratory analysis of samples of accumulated sediment. The selection of basins for monitoring would include a range of sediment basin sizes. Data analysis would include comparison of pre-project estimates of vineyard erosion rates and sediment trapping efficiency to measured rates and efficiency.

Adaptive Management

If monitoring data indicate that sediment yields from the project area are greater than predicted in the pre-project analyses, either from unexpected erosion of Class III channels or higher-than expected delivery rates of sediment eroded from vineyard fields, additional on- and off-site erosion mitigation will be developed with oversight by CAL FIRE or an alternative regulatory authority designated by CAL FIRE to ensure compliance with the DEIR's identified performance standards.

On- and off-site erosion mitigation, if deemed necessary and appropriate, may include identification of additional and presently unidentified erosion sites on the project site or on other property in the Patchett Creek watershed. Potential erosion sites could include road-related erosion sites, gullies, eroding stream banks, eroding landslide deposits, or other erosion sites delivering or potentially delivering substantial quantities of sediment to the stream channel network. Off-site projects should be developed in cooperation with any property owner involved, and should include an appropriate level of contribution from each property owner. Disused or informally abandoned logging roads and skid trails are probably the most appropriate

type of erosion site to target for off-site mitigation, however, other types of sites should be considered if identified. If suitable or practical sites cannot be located in the Patchett Creek watershed, then sites in the Wheatfield Fork Gualala River watershed should be considered.

As planned, the proposed project would not create adverse environmental conditions downstream of the project site that would have a substantial impact on steelhead in lower Patchett Creek and/or Wheatfield Fork Gualala. Therefore, the potential project-related impacts to steelhead discussed above would be less-than-significant through project design and implementation of the rigorous erosion control measures included in Chapter 3.7 of the DEIR, as discussed in Impacts 3.4-11 through 3.4-14 of Chapter 3.4 of the DEIR, *Biological Resources*.

Response to Comment 8-2

Please see Response to Comment 8-1. In addition, as noted in Response to Comment 7-9, as stated in section 3.8-4 of the DEIR, to ensure that impacts to downstream aquatic life are minimal to none, the applicant's vineyard management program draws on the best scientific information available regarding land management and pest control methods. These methods include the use of the University of California's Integrated Pest Management (IPM) program, specifically designed to promote environmentally and economically sustainable grape production, as well as state-of-the-art best management practices (BMPs).

As noted on page 3.8-27 of the DEIR, in addition to the use of IPM, the Fairfax Conversion project will be enrolled in the Fish Friendly Farming Program. This certification program, which is run by the non-profit California Land Stewardship Institute, supports the development of environmentally friendly land management practices that meet the high environmental standards required to improve conditions for salmon and trout downstream. One of the primary goals of the Fish Friendly Farms program is to limit chemical use in order to reduce impacts on fish species. When the program is completed, the site will be certified through the National Marine Fisheries Service, California State Regional Water Control Board, and the County Agricultural Commissioner. The applicant will also be enrolled in the California Association of Winegrape Growers' Sustainable Winegrowing Program, through which chemical use is reduced through the implementation of Beneficial Management Practices. Thus, the applicant is drawing on the knowledge of the local scientific, environmental and regulatory communities, and working cooperatively with them to ensure that the proposed project minimizes the use of agricultural chemicals and impacts to aquatic wildlife to the maximum extent practicable.

Protection of Aquatic Environments and Sensitive Plant Species

Loading, mixing, and rinsing operations would be conducted a minimum of 500 feet from the horkelia preserve, as well as ponds, streams, wetlands, wells and other aquatic environments. A minimum 25-foot buffer shall be maintained between the targeted spray area and aquatic environments and the horkelia preserve. All spraying will be conducted downwind from aquatic environments and the horkelia preserve. In fact, the existing and proposed (i.e., created wetlands) on-site aquatic features located closest to proposed vineyard blocks are those features nearest vineyard Unit 4 and 5a. The area between open water and proposed vines is over 0.6-acre, with maximum, minimum, and average offsets between open water and vine rows of 107 feet, 33 feet,

and 62 feet, respectively. Unit 5a is separated from the existing and proposed aquatic features by a driveway and two fences, with the distance between open water and vines being about 60-65 feet.

The vineyard plants are dormant from perhaps November through budbreak in April. Under dormancy, spraying operations would not be expected to occur in late fall or winter, with the exception of an herbicide spray in mid-winter (Dec/Jan) for early season weed control. This will be done with a Roundup-type product with no POEA surfactants. As is standard, safe and prudent practice, herbicides are never sprayed when there is a forecast of rain for 48 hours or more, or when there is standing water in the area to be sprayed. The product is directed at the low-growing vegetation near ground level from a height of approximately 12 inches above the ground, so the chances of drift are absolutely minimal. If deemed necessary, early season fungicides and a second herbicide spray would occur at early shoot growth (April-May). Most potential sprays are fungicides and occur from May-July, at which point in time most of the on-site aquatic features would be dry. Any other pesticide application would almost certainly be a spot treatment (not over the entire property) and only in response to an economically significant pest.

Response to Comment 8-3

The Fairfax Conversion project will not significantly increase water temperature or deplete flows in lower Patchett Creek or the Wheatfield Fork of the Gualala River. There is little to no surface flow exiting the project site in mid- to late-summer that would benefit steelhead downstream of the project site when water temperatures are high and stressful for this species. Therefore, the project would have no substantial effect on summer rearing habitat downstream of the project site. During the winter months, the project would also not have significant adverse effects on flows and water temperature.

Notwithstanding the above, as noted on page 3.7-27 of the DEIR, as well as pages 3-5 of Appendix M to the DEIR, *Hydrologic Analysis, Artesa Fairfax THP and Conversion*, watershed experiments at Caspar Creek indicate substantial increases in annual water yield, summer minimum flows, and storm runoff following clearcut harvest in the North Fork Caspar Creek. Reduced evapotranspiration and canopy interception are the likely causes of increases in both total annual runoff and minimum summer stream flow. More specifically, the increase in summer baseflows in the creek have been attributed to reduced canopy interception of precipitation during the rainy season and reduced evapotranspiration from forest vegetation during the growing season, resulting in increased soil moisture. In other words, more rainfall reaches the soil surface following harvest, and forest vegetation draws less water from the soil via its root system and more of the rain water that enters the soil during the wet season remains in the soil and moves by gravity into surface channels, shallow sub-surface channels, or percolates to groundwater aquifers. Consequently, the possibility exists that a greater percentage of the on-site winter precipitation entering the site soils will ultimately makes its way into Patchett Creek in the summer, thereby, contributing more towards summer baseflows as compared to the site's current level of contribution to summer baseflows. Moreover, any sub-surface water making its way into Patchett Creek during the summer -- be it from groundwater aquifers or shallow sub-surface channels – would be of sufficiently cool temperatures (typically

50 to 55 degrees F), so as not to cause any adverse effects to steelhead. Increase in summer baseflows would help maintain cooler water and enhance habitat.

Response to Comment 8-4

Please see Response to Comment 8-3 above. See also Response to Comment 12-7 for further related discussion.

Response to Comment 8-5

Please see Response to Comment 8-1.

Letter 9

East-West Forestry Associates, Inc.
PO Box 276
Inverness, CA 94937
415 669 7100
www.forestdata.com tgaman@forestdata.com

Thomas Gaman, Registered Forester #1776

July 25, 2009

To Whom It May Concern;

I reviewed section 4.3 of the Fairfax Conversion project comments entitled "The Cumulative Contribution to Global Climate Change".

9-1 The writer estimates that the project would generate emissions of 231 metric tonnes of carbon per year, while it would sequester approximately 355 tonnes per year. However, the analysis mostly ignores the fact that deforestation would substantially reduce the ongoing sequestration of carbon that has historically been, and continues to be, up to 2348 tonnes of carbon per year (according to the document under review). This is another loss of a California forest, and it further reduces California's statewide ability to meet its AB32 2020 mandate.

9-2 The author also does not include an estimate of carbon emissions associated with deforestation of 171 acres, nor the exhaust emissions associated with the logging and forest removal. Presumably these forests, as they presently exist, have a current sequestered inventory of tens of thousands of tons of carbon, which would be released to the atmosphere during the conversion process.

9-3 The document does not discuss soil and duff and litter layer carbon pools. In creation of the vineyard I presume that the vineyard would not longer sequester these carbon pools, resulting in further carbon loss. These permanent losses are not discussed, and the numbers should appear in the environmental significance document.

9-4 Further the analyst does not include emissions from vineyard activities; instead it restricts the estimate to only the miles driven by workers commuting to and from the vineyard. The estimate does not include diesel from large trucks, farm equipment, tractor emissions, and other emissions associated with vineyard maintenance and operations. The actual emissions associated with the vineyard operation would be much greater than the estimate provided. The vehicle emissions of 366 grams of CO_2 per mile seem to be on the low side. At 18 miles per gallon I roughly estimate emissions to be about 550g of CO2 per vehicle mile.

9-5 The author at times seems confused between carbon and carbon dioxide. We are not sure which metric is being used and in at least one table carbon is equated to carbon dioxide. According to the California Climate Action Registry, a ton of carbon dioxide equates to 1 ton of carbon.

9-6 The writer assumes that vines in the vineyard would sequester a measurable amount of carbon that would partially offset the loss of the forest. I suggest that the vines sequester a miniscule amount of carbon when compared to native redwood forests and oak woodlands.

Therefore, the numbers provided seem to indicate to me that the conversion of 171 acres would result in a significant local climate impact.

Sincerely

Thomas Gaman

Tom Gaman

LETTER 9: TOM GAMAN – EAST-WEST FORESTRY ASSOCIATES, INC.

Response to Comment 9-1

Please see Response to Comment 6-8 for a detailed discussion of climate change and carbon sequestration.

Response to Comment 9-2

Please see Response to Comment 6-8.

Response to Comment 9-3

Please see Response to Comment 6-8.

Response to Comment 9-4

Please see Response to Comment 6-8.

Response to Comment 9-5

Please see Response to Comment 6-8.

Response to Comment 9-6

Please see Response to Comment 6-8.

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GRASSETTI ENVIRONMENTAL CONSULTING

Mr. Allen Robertson
California Department of Forestry and Fire Protection
P.O. Box 94426
Sacramento, CA 94244-2460

July 28, 2009

SUBJECT: FAIRFAX CONVERSION PROJECT DRAFT ENVIRONMENTAL IMPACT REPORT COMMENTS

Dear Mr. Robertson;

10-1 Grassetti Environmental Consulting (GECo) has been retained the Friends of the Gualala River (FOGR) to review and comment on the Draft Environmental Impact Report (DEIR) for the Fairfax Conversion Project to assure that that document fully complies with the California Environmental Quality Act (CEQA) and its implementing Guidelines. This review was conducted by Richard Grassetti, the firm's principal, and is based on my 25 years of experience in CEQA document preparation, review, and training of CEQA professionals. In preparing these scoping comments, I reviewed the DEIR, visited the site vicinity in Annapolis, and reviewed other available materials including letters from citizens and environmental groups. I also have reviewed and incorporated by reference independent expert technical analyses of hydrology, fisheries, and cultural resources prepared for FOGR.

10-2 As discussed in greater detail in the table below, our review indicates that, in a number of resource areas, the DEIR is overly optimistic in its conclusions of impact severity and effectiveness of mitigation measures. The cumulative impacts assessment is similarly flawed. In addition, the cultural resources and hydrology assessments appears to be incomplete to such an extent that revision and recirculation of the analysis is required for CEQA compliance. Finally, the alternatives assessment is artificially limited in scope by an impermissibly narrow project purpose, and fails to adequately consider potential off-site alternatives and a further reduced project. It should be noted that the alternatives cannot be fully developed until the site's cultural resources are accurately mapped and analyzed for significance.

n summary, it is my professional opinion that, given the extent of the flaws detailed below, this DEIR does not meet CEQA requirements for full disclosure of potential impacts of the proposed project as well as cumulative projects. It will require substantive revisions including identification of potentially unavoidable adverse impacts;

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reassessment of biological resources, cultural resources, hydrology, noise, aesthetic, and greenhouse gas impacts; substantial revisions of the alternatives analysis; and re-assessment of many of the cumulative impacts. Once revised, the DEIR should be recirculated for public review. Please feel free to contact me at 510 849-2354 if you have any questions regarding the comments herein.

Sincerely

Richard Grassetti
Principal
Grassetti Environmental Consulting

Attachments:
Grassetti Qualifications
Holman Letter and Resume

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TABLE OF SPECIFIC COMMENTS

	Page	Paragraph	Comment
10-3	2-3	Fig 2-1	Figure is unclear as to the distinction between "Project Boundary" and "Project Area". Is the "Project Area" actually just the area covered by the TCP? Or is it the area to be planted in vineyards?
10-4			The figure seems to be saying that the project is limited to the area proposed for timberland conversion (and therefore requiring the CDF TCP). Timberland conversion is only a portion of the project, which is the development of a vineyard and associated facilities. This brings up the larger issue of whether CDF is the appropriate Lead Agency for the project. If the parcels are, for example, proposed to be consolidated into a single parcel, then Sonoma County approval would be required and the County would be the appropriate CEQA Lead Agency.
10-5	2-6, 7	Project Objectives	The objective of "To take advantage of the site's unique topography and microclimate to produce premium quality grapes for Artesa's 'Sonoma Coast Estate Chardonnay and Pinot Noir' wine program" is impermissibly narrow under CEQA because it eliminates realistic consideration of alternatives, particularly off-site alternatives. It should be deleted and the range of feasible alternatives should be reevaluated.
10-6	2-9	First full (un-numbered) para.	This paragraph states that "The applicant has stated that once the vines are established the vineyard would be primarily dry farmed…" Will this be made a condition of approval of the TCP? If not, how will it be enforced? If it is not enforceable, the EIR should not assume it will occur and the EIR should evaluate potential impacts of continued diversion/pumping of water.
10-7	2-9-15	Figures 2-6 through2-11	These figures are all hard to read and need additional legends/explanations as to what the lines and symbols mean. Do they show grading? Will the entire site be graded?
10-8			What structures and other facilities will be built in the 1-acre corporation yard?
10-9	2-17	Timber Harvest	What's the total volume of timber to be removed?
10-10			Do the WLPZ buffer zones comply with County buffer

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10-10 Cont'd			zones as specified in Section 26-10-020(c) of the County Zoning Ordinance? If not, a Conditional Use Permit would be required by the County, and the prospect of the County being the appropriate Lead Agency should be re-evaluated.
10-11			In addition, will the proposed temporary or permanent roads require an encroachment permit from the County to connect to Annapolis Road?
10-12	2-19	General	What's the total amount of grading proposed for the site? Will it be balanced on the site?
10-13	2-20	Fig. 2-12	What's a "comment point"? What are the "operations" envisioned in this figure? Where are the vineyards proposed? This is a conversion map; that's not the whole of the CEQA project.
10-14	2-23	First para	Will nighttime fungicide application require lighting? If so, this needs to be added to the visual impacts assessment.
10-15	2-24	First full para.	This para. States that 'according to the applicant, irrigation runoff would not occur…". Has this been independently verified? If not, what conditions are proposed to assure that this will be the case?
10-16			Will residual storage of water in the pond result in mosquito breeding?
10-17	2-25	Harvest Operations	The noise impacts analysis assumes that harvesting would be by hand and not mechanically. Yes this portion of the project description states that mechanical harvesting would be permitted and may occur. This could result in significant noise impacts not addressed in the EIR. Please revise the noise impacts analysis accordingly.
10-18	2-26	Project Entitlements	Will County design review (for structures) be required? Will encroachment permit (for roadway connections) be required? Will a use permit be required? Will lot line adjustment or parcel consolidation be required?
10-19	3.2-1	Introduction	Same comment as above re possible County discretionary entitlements.
10-20	3.2-4	Last line	This states that the minimum parcel size for RRD designation is 640 acres. Given that the project parcels are far smaller than this, will the project include lot consolidation? Also, the RRD-40 zoning does not comply with the 640-acre General Plan designation requirement. Please discuss how this inconsistency is addressed in the proposed project.

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10-21	3.2-19 through 21	Impact 3.2-1	The County's Right to Farm ordinance has no bearing on physical impacts to the environment, which is CEQA's mandated focus, including impacts to adjacent land uses from proposed intensified agricultural activities on the site. The following conclusion that the project would have no land use impacts because it is consistent with zoning is entirely unsupported by fact and fails to meet CEQA analysis requirements. Please revise this discussion focus on physical impacts, not regulatory compliance, as required by CEQA.
10-22	3.2-22/23	Consistency with General Plan	See previous comments – the project doesn't seem to comply with the GP's 640-acre minimum parcel size. Please note that when zoning and general plan designations are inconsistent, the general plan designation rules.
10-23	3.3-9	2nd para	The last sentence defines a significant impact as an action that would "block implementation of an ARB established regulation to reduce GHG emissions." This criteria of significance is inappropriate and unsupportable in a CEQA context because no ARB regulations exist yet the cumulative GHG impact continues to worsen. Further, it is highly unlikely (or impossible) that any single project would "block" implementation of such a regulation if one did exist. Numerous cities and counties in California have utilized realistic standards of significance in their CEQA documents. Some of these are posted on the Attorney General's website : http://ag.ca.gov/globalwarming/ceqa.php. In addition, the Office of Planning and Research has released the following draft CEQA Guidelines for GHG assessment: *15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions* *(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall* *have discretion to determine, in the context of a particular project, whether to:* *(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or*

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		methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or *(2) Rely on a qualitative analysis or performance based standards.* *(b) A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:* *(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;* *(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.* *(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas* *emissions. Such regulations or requirements must be adopted by the relevant public agency.* This EIR's approach of stating that the impacts would not be significant because they wouldn't block a regulation that hasn't been established is impermissible under CEQA case law. For example, in Berkeley Keep Jets Over the Bay v. Board of Port Commissioners (2001), the court ruled that: *The fact that a single methodology does not currently exist that would provide the Port with a precise, or "universally accepted," quantification of the human health risk from TAC exposure does not excuse the preparation of any health risk assessment-it requires the Port to do the necessary work to educate itself about the different methodologies that are available.* In this case, the EIR preparers failed to look at the readily available methodologies and significance criteria that actually identified impacts and determined significance of projects' contributions to GHGs/climate change. Therefore this EIR's "analysis" that fails to analyze the significance of this project's substantial increase of GHG's from the site is completely inadequate.
Section 3.4		As described in detail in comments submitted under separate cover by Dr. Peter Baye, the project has the

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		potential for causing the following impacts that have not been fully addressed in the EIR: • The permanent pond reservoir would add to the cumulative facilitation of non-native predator invasion (bullfrog) of Gualala River • The project could result in indirect and cumulative impacts of fungicide, herbicide, pesticide transport and fate on native amphibians, fish, and prey base (aquatic invertebrates). The cumulative impact of the project's contribution to the pesticide load associated with spread of vineyards in the Wheatfield Fork watershed also needs to be assessed. • The project's potentially significant cumulative impacts due to project, including winter/spring-season herbicide transport, increased bullfrog invasion and predation pressure due to permanent irrigation pond habitat, increased peak flow, and groundwater exploitation (reduction in baseflow) during critical drought years (when reservoir supplies fail) on Patchett Creek aquatic and amphibian species of concern (endemic Gualala Roach, western pond turtle, foothill yellow-legged frog) have not been adequately assessed. • The size of the Annapolis manzanita and thin-leaved horkelia mitigation reserves does not provide for population age-structure or recruitment and turnover over time; they are botanical gardens rather than biological reserves. The proposed mitigation will provide only short-term and nominal conservation of these special-status species. Therefore the project's impacts to these species should be considered significant. • Plant surveys provide no information on distribution, frequency or abundance, and do not distinguish between isolated occurrences or patterns of locally elevated biodiversity ("hot spots"). Surveys report Phantom orchid, which is associated with mature forest communities and is rare south of Humboldt County. This is a significant occurrence, particularly if it is a viable population or associated

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10-28 Cont'd			with concentrations of other uncommon or rare plants and fungi. • The DEIR narrowly assesses "wildlife corridors" while ignoring the larger-scale and more significant impact of forest habitat fragmentation due to existing, proposed vineyards, including the project and Preservation Ranch. Please reassess these cumulative impacts.
10-29			• The potentially significant impact hazard to migratory birds, raptors, owls of bird netting over ripening grapes has not been addressed or mitigated.
10-30			• The DEIR reduces impacts to narrow scope of "take" of individual Notehrn Spotted Owls (short-term timber harvest impact analysis), and fails to address potentially significant long-term, indirect and cumulative impacts of landscape-level changes that facilitate invasion by non-native predator and competitor, barred owl, which has increased frequency in Annapolis. Analysis is flawed because it ignores long-term habitat suitability and maturation compared with conversion. Analysis wrongly assumes that NSO do not mate or nest in rural residential forested parcels.
10-31	3.4-146	Last paragraph	This paragraph states that the project would "only reduce streamflows during the winter when reduced flows would be negligible." However, the EIR places no operating limits on the pond/storage system. What's to prevent the project from diverting fall runoff? If there are no restrictions on this, then the EIR must assess the impacts of such diversions or include mitigations establishing such restrictions. Further, no analysis has been done regarding cumulative changes in runoff from all of the existing, approved, or planned vineyard conversions in the Gualala River watershed. Please add that analysis to this section as well as the Hydrology section.
10-32	3.4	Fisheries	As detailed in the Patrick Higgins letter submitted under separate cover, numerous studies over the last decade of northern California logging impacts (Ligon et al. 1999, Dunne et al. 2001, Collison et al. 2003) point out that on-site mitigation cannot prevent downstream damage when too great a watershed area is disturbed in too short a period, which is
10-33			

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10-33 Cont'd			the case with the Gualala River and Patchett Creek watershed in which the project is taking place. While the DEIR presents alarming statistics on land use that indicate extremely rapid and extensive disturbance and development (i.e 28% timber harvest in 10 years, > 6 miles of road/square mile), the cumulative effects significance is never discussed and instead old logging activities are blamed for the current aquatic conditions. Evidence presented regarding Patchett Creek indicates advanced cumulative effects that the project will most certainly exacerbate.
10-34			In some cases the actual effects of the project are misrepresented, such as the claim that installation of tile drains and storage of runoff in a 73 acre foot reservoir will not alter groundwater recharge or base flow in Patchett Creek.
10-35			Similarly, the likelihood that invasive and voracious bullfrogs will colonize their pond and likely extirpate native yellow-legged frogs is also overlooked. The DEIR admits that steelhead use lower Patchett Creek in reaches that have perennial flow, but then stakes out the absurd position that because they cannot access upper reaches due to natural barriers that there will be no impact from the project on the species. Despite five years since the first draft TCP, critical data gaps remain regarding use of Patchett Creek by steelhead, flow levels in the creek, groundwater levels at the project site, connection of groundwater and surface water and whether previous development and vineyard conversions have already depleted flows. The EIR fisheries analysis should be revised to remedy these deficiencies, as detailed in the Higgins letter.
10-36			
10-37	3.5-7	General	As detailed in the attached letter from Holman & Associates, there are major deficiencies in the archaeological resources assessment. These include: • Problems with adequacy/completeness of the Neri assessment, including inadequate survey methodology
10-38			• Failure of the Origer study to review the entire property • Changes in field conditions in the past 9 years not accounted for in limited Origer work scope
10-39			• Failure to consider the possibility of the cultural

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10-39 Cont'd			resources on the site constituting a historic district Please refer to the attached Holman & Associates letter for additional detail on these issues.
10-40	3.5-7/8	Artesa Site-01	Has the full extent of site 1 been determined? What's the buffer from the confirmed edges of this village site to the proposed vineyards? Given the differences between Neri's and Origer's finds on some of the other sites, we suggest that Origer re-evaluate Neri's work on this site.
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10-42	3.5-9-25	Origer Investigations	Given the differences between Neri's and Origer's finds on some of the other sites, we suggest that Origer or another archaeologist re-evaluate the entire site's cultural resources.
10-43			Given the number of sensitive sites eligible for the NRHP already found at the site, please include consideration of the possibility that this property may constitute a Historic District. Should additional NRHP-eligible sites be discovered, or if the site is found to include a Historic District, additional mitigation should be developed, as well as additional or revised alternatives that avoid the sensitive cultural resources.
10-44	3.5-22	Impact 3.5-2	The criteria of significance discussed in the impacts assessment do not correlate to those listed in the "Standards of Significance" section of the EIR. In addition, Mitigation Measure 3.5-3(a) seems to present yet another set of significance criteria. To which of the listed standards are the impacts discussion referring? Why does the mitigation measure have different criteria from the impacts assessment? Additionally, Mitigation Measure 3.5-3(a) doesn't seem feasible. How are vineyard workers (who often are temporary, migrant, and non-English speaking) going to be adequately trained to recognize and prevent damage to cultural resources. If a mitigation measure isn't feasible, the impact remains significant.
10-45	3.7-2	Watercourses	The Cultural Resources section identifies an on-site seep or spring at the head of one of the channels on the site. This seep feeds some wetlands plants. Please add this to the

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10-45 Cont'd			hydrology section and discuss how the project's diversions of surface waters and pumping of ground waters might affect its flows and the plants/animals that use it.
10-46	3.7-22/23	Tables 3.7-4/5/6	Existing peak 2-year flows from Nodes 1 and 2 vary widely between tables 3.7-4/5 and Table 3.7-6. Please clarify the differences and the reasons for them.
10-47	3.7	General	This section is generally poorly organized and difficult to make head or tail out of. For example, p. 3.7-28, which is in the Setting section, contains an impacts analysis of late summer rainfall capture.
10-48	3.7-47	Average Annual Rainfall	The average annual rainfall for Annapolis relies on 1931-1970 data and does not reflect the most relevant rainfall period of record, namely the period from 1970 to the present, which includes two of the greatest drought periods on record. Given the current period of climactic instability, please reassess the water resources/hydrology impacts in light of the most recent rainfall data and trends.
10-49	3.7-61 through 3.7-77		This impact assessment appears to be a data dump of information, much of which is unrelated to the impact in questions. For example, Protection of the Natural Habitat on p. 3.7-64 relates not to sedimentation but to Impact 3.7-7.
10-50	3.7-85	Domestic Well	Please provide data/calculations supporting the conclusion that "water use would…be unlikely to exceed 20 gallons per day." During harvest periods with up to 72 workers on the site, this would mean that each worker would use less than .3 gallons of water/day. Why would a 1,000-5,000 gallon tank be installed if daily water use would generally not exceed 20 gallons? This would be a 50-250-day water supply.
10-51	Section 3.7	Water supply/hydrologic balance	As detailed in the Kamman Hydrology &Engineering letter, the DEIR and technical studies fail to satisfy the hydrogeologic analysis and report requirements established by the State and County for such assessments. For example, reports do not document attempts to learn of well failures on unsuccessful attempt so develop water in the impact area. It does not appear that local property owners of well drillers were contacted for groundwater information. A water balance is not provided pursuant to standard practice. The reports do not discuss current or

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		projected (cumulative) quantities of groundwater pumped. No aquifer storage capacity is calculated, nor is there any discussion of aquifer tests. These documents fail to evaluate if project well pumping will interfere with surrounding wells or adversely deplete existing groundwater resources. In short, Kamman's review indicates that potential impacts from groundwater pumping and altered hydrology have not been evaluated in accordance with State laws, County policy or to the standards of care that govern the practice of geology and hydrogeology in State of California.
3.7	Groundwater overdraft	The DEIR is inconsistent in the stated uses of water that will be pumped from the proposed project well. On page 3.7-16 it is stated that the water will be used for drinking. On another page, the well water is stipulated for "washing and other incidental uses (pg. 3.7-48). As indicated above, the DEIR does not present an acceptable analysis of potential impacts from groundwater pumping on local groundwater supplies. Groundwater overdraft is a real, if not existing, concern in the Ohlson Ranch Formation Highlands Groundwater Basin. The geologic and land-use setting of the Ohlson Ranch Fm. basin is strikingly similar to coastal Wilson Grove Formation further south along the Sonoma Coast that is experiencing severe groundwater overdraft that has occurred due to residential and vineyard growth. The Annapolis area and underlying aquifer system are currently undergoing very similar growth and water demands that have led to the severe groundwater overdraft now impacting the Joy Road Study Area. Please re-evaluate the project's impacts to groundwater in this context.
3.7-86	First para.	This paragraph states that, "Well water could conceivably be used to fill the proposed 73-ac-ft reservoir." Is this proposed as part of the project? If so, please evaluate the impacts on local groundwater resources. If not, please include a condition or mitigation prohibiting such use.
3.7	Sediment transport	The DEIR fails to complete a sediment impact assessment or water budget assessment in project subareas that drain to Grasshopper or Little Creek. The DEIR authors assume that impacts in these areas, if any, would be insignificant. Failure to complete the analysis clearly indicates that

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		potential impacts have not been evaluated and the DEIR is incomplete. It is important to also note that one of these areas will be where the "corporation yard" and groundwater well will be constructed – the details of which are both very sparse within the DEIR.
3.7	County Drainage and Stormwater Management Ordinance compliance	As stated in the DEIR, Chapter 11 of the Sonoma County Code regulates all acts that obstruct or diminish free flow of floodwaters in channels or waterways within the county (Ordinance No. 4803 § 1 and 1994: Ord. No. 1108 § 15). A permit for any of the following acts is required: (a) Impair or impede or obstruct the natural flow of storm waters or other water running in a defined channel, natural or man-made, or cause or permit the obstruction of any such channel. The DEIR is inaccurate in the assessment that the project will not impact Patchett Creek as the DEIR clearly states that the project will, "eliminate runoff to a 1,200-ft reach of Class III channel south of the proposed reservoir site" and "the reservoir collection system would also largely eliminate storm runoff delivered to two large gullies." (pg. 3.4-142)
3.7	Peak Flows/Channel Erosion	As detailed in the Kamman letter, it is clear from this wide range of reported peak flow increases, the project proponents don't really know what to expect in terms of peak flow increases. Regardless, the conclusion that project induced increases in peak flow on the order of 10-perent will not pose a real and potential threat of increased erosion in receiving channels fails to fulfill the CEQA requirement of conservative assessment of impacts (reasonable worst case). Given the wide range of estimated potential peak flow increases and inherent uncertainty in the estimate, it would be prudent to assume a conservative analysis and anticipate the maximum estimated peak flow increases. Although Sonoma County and the North Coast RWCB have not developed hydrograph modification or hydromodification management plans or policies, the current professional standards for hydromodification management plans (e.g., Alameda and Santa Clara Counties) stipulate no net increase in flood flow magnitude between pre- and post-project conditions.

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10-59	3.7	Erosion/Sedimentation Impacts	The DEIR sediment yield assessments bias upland soil loss sources and do not accurately account for potential increased erosion to downstream receiving channels in association with the peak storm runoff magnitudes discussed above. At best the DEIR assessment provides a qualitative assessment of downstream channel erosion which assumes channels will have a low to moderate sensitivity to erosion (pg. 3.7-66). However, no attempt to quantify or account for the project-induced increase in erosion or sediment yield from downstream receiving channels are captured in the totals provided in the DEIR, which indicates a post-project decrease in sediment yield. Again, this is not a conservative assessment and provides and overly-optimistic future condition.
10-60	3.9-9	General	The traffic analysis fails to address traffic hazards during construction and operations, including hazards associated with large logging trucks and delivery and removal of grading equipment. Please add this analysis to the EIR.
10-61	3.9-11	3rd para	Would double-gondola trucks be able to navigate Annapolis Road and other local access roads? To where would grapes be trucked?
10-62			Is there a passenger-car-equivalent that should be added to Table 3.9-3 for these large trucks on hilly roads?
10-63	3.10-6	Standards of Significance	The Noise Standards of Significance seem to mischaracterize the County Noise Element, which has the following table of acceptable noise levels/durations:

Table NE-2 Noise Level Performance Standards

Maximum Exterior Noise Level Standards, dBA

Category	Cumulative Duration of Noise Event in any one-hour period	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
1	30-60 Minutes	50	45
2	15-30 "	55	50
3	5-15 "	60	55
4	1-5 "	65	60
5	0-1 "	70	65

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10-63 Cont'd			With respect to both daytime tree removal and grading, and night-time harvesting operations, the 30-60 minute cumulative duration of noise events would likely apply, resulting in daytime acceptable maximums of 50dBA and nighttime maximums of 45 dBA at the nearest offsite receptors. Please revise the significance criteria and impact analyses accordingly.
10-64	3.10	general	Please add a discussion of the specific noise sensitivity of the adjacent Starcross Monastic community and evaluate the impacts of project-generated noise on religious activities at that monastery.
10-65	3.10-7	Impact 3.10-7	Please add chainsaw noise to this analysis. Please add logging truck noise to this analysis. Please reconsider impact assessment in light of County noise standards discussed in our previous comment.
10-66	3.10-8/9	Impact 3.10-3	The EIR's project description does not rule out the use of mechanical harvesting equipment. The nighttime noise impacts of this machinery to adjacent residents needs to be analyzed. Also, please reassess operational noise in terms of the County's Noise Element Table NE-2, above.
10-67			Mitigation 3.10-3 should be revised to prohibit both mechanical harvesting at night and any off- trucking of grapes prior to 8AM.
10-68	3.11-2	general	Please add discussion of where the site is visible from (both public and private views). This impact cannot be accurately determined absent this information.
10-69	3.11-9	First para.	The EIR states that there's no adverse impact to visual quality from changing from forested/meadows to intensive agriculture because both are have "openness". This fails to address that the forested/meadow appearance is one associated with natural areas and agriculture is not. In addition, forests obscure views of man-made features that may lay beyond, while vineyards do not. Therefore, although beauty is in the eye of the beholder, some viewers may find a significant adverse impact from the proposed conversion. As noted in this DEIR's Alternatives section, forested lands are considered aesthetically pleasing, and, therefore, the loss of such a visual amenity is a potentially significant impact.

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10-69 Cont'd			In addition, several recent CEQA court cases have ruled that the public can be considered an "expert" in visual quality. Please revise this impact to significant and unavoidable.
10-70	3.11-10	Light and glare	The EIR inexplicably considers two months of nighttime lighting, with harvesting machinery and with floodlights to be less than significant. Nighttime lighting for two months could disturb neighbors and others with more distant views of the site. Please include a lighting study supporting your conclusion or revise this impact to significant and unmitigable.
10-71	4-3	Last para.	It is unclear why only 750 acres of the proposed 19,652-acre Preservation Ranch project are included in the cumulative impacts assessment. From ecological, greenhouse gas, land use, traffic, noise, air quality, cultural resources, and visual perspectives all aspects of that project are relevant to the project's cumulative impacts assessment. Therefore the entire Preservation Ranch project, including all 1861 acres of proposed vineyards, should be considered in the cumulative impacts assessment.
10-72	4-6 through 4-12	Timberland conversion discussion	This entire discussion is only of marginal relevance to answering the question of cumulative loss of timberlands and conversion of those timberlands to vineyards. The timberland-to-vineyard conversion data from the University of California study is 12 years old and therefore not representative of current cumulative conversion conditions. In addition, the Preservation Ranch THPs are not included in the acreages on p. 4-8, first full paragraph.
10-73			The "Conclusion" on pp. 4-11/12 fails entirely to address cumulative loss of forested lands to vineyard conversions and just re-hashes the EIR's conclusions regarding the loss of the project's forested lands to vineyard conversion.
10-74			The concluding statement that the project's incremental contribution to the loss of forested lands is entirely unsupported by fact. In fact, even the outdated data included in the section indicates that cumulative land use changes in the County due to vineyard conversions may, in fact, be significant.
10-75	4-13 through	Climate Change	California has determined that it needs to reduce its GHG emissions to 1990 levels by 2020 - a reduction of

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4-16		approximately 30 percent, and then an 80 percent reduction below 1990 levels by 2050 to mitigate the State's impacts to global climate change. In addition the Resources Agency had promulgated draft changes to the CEQA Guidelines stating that impeding the goals of AB 32 would normally be considered a significant impact. Given that the project would substantially and permanently reduce carbon sequestration by up to 1100 metric tons/year (the EIR's stated "worst-case" carbon emissions increase of 83.6 metric tons of carbon emissions is actually the "best-case" impact, based on data provided in Table 4-3), it fails on its face to comply with AB 32 requirements and would contribute incrementally to this global cumulative impact. The EIR's logic that each project's emissions would not be cumulatively considerable because of the overall large statewide emissions flies in the face of the goal of cumulative impacts assessment, which is to consider effects that may be individually inconsiderable but cumulatively significant. The state legislature has determined that existing emissions of GHGs are already having a significant adverse effect on the environment, therefore an 1100-ton addition to that would clearly be cumulatively considerable. Please revise and add mitigation (i.e. purchase offsets, reforestation of other sites) or alternatives that would reduce the projects contribution to this impact (i.e select a non-forested site). As discussed in comments on the Air Quality section, above, the lack of established statewide thresholds does not relieve the Lead Agency from the obligation to do a good faith analysis of the significance of these impacts. Given that other Lead Agencies throughout the state have been assessing and determining the significance of GHG emission, there is absolutely no reason that CDF can't do that for this project.
4-19/20	Cultural Resources	This analysis fails to address the potential for an archaeological or historic district to occur on and off of the project site. It should be revised to address the potential effects on local cultural resources of past and planned vineyard conversions and other land uses in the project

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		area.
4-22	Hydrology and Water Quality	This analysis fails to address cumulative changes in streamflow regimes (particularly summer base flows) that would occur in local creeks and the Gualala River from the past and planned cumulative conversions of forested land to vineyards. The DEIR presents no cumulative impact assessment regarding how the project will contribute to existing and future hydrologic changes associated with other projects within the basin. The 2020 General Plan states that new vineyard development alone will increase over 124% along the Sonoma Coast by 2020 and favorable geologic and meteorologic conditions target the Annapolis area for this development. The DEIR simply presents a computation and argument that the project-induced increase in peak flow is a very small and, by itself, won't lead to a significant downstream impact. There is no effort to characterize or quantify how this "small" project impact will affect the basin in combination with other basin projects (e.g., housing, vineyard, roads, and forestry) that may also be introducing increases in peak flows. The DEIR does not quantify project-specific impacts related to aquifer pumping and changes in local groundwater conditions and how, if any, well pumping will impact adjacent land-owners who also rely on groundwater supplies for domestic uses. Please add an analysis of this.
4-23	Traffic	The cumulative traffic assessment does not address traffic safety issues. Please add.
4-30/31	Aesthetics	This assessment correctly notes that the project would contribute to the loss of timberland and associated pleasing visual qualities. However, it fails to address the additive landscape changes from converting thousands of acres of iconic forested ridgetops in northwestern Sonoma County from forest to cultivated vineyards. These are visually prominent features in many views of the area and the project would contribute considerably to this significant visual change. Just because the ridges aren't considered scenic in the General Plan does not make them un-scenic. Please revise the impact assessment accordingly.
5-2	Section 5.4	As detailed in the above comments, the conclusion that the

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10-82 Cont'd			project would have no significant unavoidable environmental impacts is not accurate and should be revised accordingly.
10-83	6-2	Second from last paragraph	The statement that "All historical resources will be preserved…" is unsubstantiated by the existing studies (see comments on Cultural Resources section and accompanying Holman &Associates letter). Please revise this analysis accordingly.
10-84	6-5	Cultural resources	See above comment – studies to date do not support the statement that the project would avoid all significant cultural resources.
10-85	6-11	Transportation	This discussion addresses the No Project – No Action Alternative instead of the Timber Resource Management Alternative – please revise.
10-86	6-12	Offsite Alternative	The Offsite Alternative has several major flaws: 1) As discussed in our comments on Project Objectives, above, the objective of having a site that is optimal for a single grape variety is impermissibly narrow. (The focus on Pinot Noir in this section is inconsistent with, and even more restrictive than the already impermissibly narrow "Pinot Noir and Chardonnay" used in the project objective section of the EIR.)
10-87			2) The offsite alternative should consider non-forested lands elsewhere in Sonoma County, including lands already in production with other grape varietals (which would minimize new impacts). The DEIR fails to consider commercial availability of other Pinot Noir-suitable sites currently undeveloped but proposed for other projects that intend to develop and sell individual parcels as vineyards (Preservation Ranch). It fails to consider a reasonable "market area" or "service area" for alternative sites that could produce premier wine grapes in prior converted croplands and prior converted agricultural watersheds. Finally, the DEIR fails to address contemporary (2009) economic and market conditions for premier wine grapes in setting feasible alternative project sizes.
10-88			3) The analysis of generic offsite alternative fails to provide decision-makers on the potential impacts

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10-88 Cont'd			associated with, and the feasibility of, specific alternative sites. The EIR should select one or more specific sites (including unforested sites) for evaluation.
10-89			4) The 300-acre offsite alternative selection criteria is oversized; due to unusual cultural and biological resources constraints specific to this site the project would have only 190-acres of vineyards, therefore a 200-acre alternative site criteria should be adequate. The offsite alternatives should be re-screened and reassessed to address the above deficiencies.
10-90	6-19	Cultural Resources	Given the numerous NRHP-eligible cultural resources sites on the proposed project site, it is highly unlikely that an alternative site would contain similar resources. To assume otherwise would be to make the unsupported assumption that most ridges in the area have native American village sites, which is false. Please revise.
10-91	6-20	Reduced Acreage Alternative	The DEIR fails to justify a minimum economically viable size for a reduced project alternative, and fails to account for older, adjacent vineyards with substantially smaller vineyard acreage. It fails to account for the previous Artesa proposal to convert 105 acres of vineyard rather than 171 acres. Why was this alternative limited to a 10% reduction in total site acreage? Given that the site has not been adequately searched for cultural resources, and given the significant loss of carbon sequestration on the site, please consider an alternative that further reduces the project's footprint and includes a reforestation component for the remainder of the site to offset the carbon sequestration loss associated with the project.
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Richard Grassetti

PRINCIPAL

Expertise	• CEQA/NEPA Environmental Assessment • Project Management • Geologic and Hydrologic Analysis • Training and Education
Principal Professional Responsibilities	Mr. Grassetti is an environmental planner with 25 years of experience in environmental impact analysis, hydrologic and geologic assessment, project management, and regulatory compliance. He is a recognized expert on California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes, and has served as an expert witness on CEQA and planning issues. Mr. Grassetti regularly conducts peer review and QC/QA for all types of environmental impact analyses, and works frequently with public agencies, citizens groups, and applicants. He has managed the preparation of over 50 CEQA and NEPA documents, as well as numerous local agency planning and permitting documents. Mr. Grassetti has prepared over 200 hydrologic, geologic, and other technical analyses for CEQA and NEPA documents. He has analyzed the environmental impacts of a wide range of projects including residential developments, waste management projects, mixed-use developments, infrastructure improvements, energy development, military base reuse projects, and recreational facilities throughout the western U.S. In addition to his consulting practice, Mr. Grassetti regularly conducts professional training workshops on CEQA and NEPA compliance, and is a lecturer at California State University, East Bay, where he teaches courses on environmental impact assessment, among others.
Professional Services	• Management and preparation of all types of environmental impact assessment and documentation for public agencies, applicants, citizens groups, and attorneys • Peer review of environmental documents for technical adequacy and regulatory compliance • Expert witness services • Assisting clients in CEQA and NEPA process compliance

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- Preparation of hydrologic and geologic analyses for EIRs and EISs
- Preparation of project feasibility, opportunities, and constraints analyses, and mitigation monitoring and reporting plans

Education

University of Oregon, Eugene, Department of Geography, M.A., Geography (Emphasis on Fluvial Geomorphology and Water Resources Planning), 1981.

University of California, Berkeley, Department of Geography, B.A., Physical Geography, 1978.

Professional Experience

1992-Present	Principal, GECo Environmental Consulting, Berkeley, CA
1994-Present	Adjunct Professor, Department of Geography and Environmental Studies, California State University, Hayward, CA
1988-1992	Environmental Group Co-Manager/ Senior Project Manager, LSA Associates, Inc. Richmond, CA
1987-1988	Independent Environmental Consultant, Berkeley, CA
1986-1987	Environmental/Urban Planner, City of Richmond, CA
1982-1986	Senior Technical Associate - Hydrology and Geology - Environmental Science Associates, Inc. San Francisco, CA
1979-1981	Graduate Teaching Fellow, Department of Geography, University of Oregon, Eugene, OR
1978	Intern, California Division of Mines and Geology, San Francisco, CA

Professional Affiliations and Certifications

Member and Past Chapter Director, Association of Environmental Professionals, San Francisco Bay Chapter
Member, International Association for Impact Assessment

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Publications and Presentations

Grassetti, R. *Round Up The Usual Suspects: Common Deficiencies in US and California Environmental Impact assessments.* Presented at International Association for Impact Assessment Conference, Vancouver, Canada. May 2004.

Grassetti, R. *Understanding Environmental Impact Assessment – A Layperson's Guide to Environmental Impact Documents and Processes.* May 2005

Grassetti, R. *Developing a Citizens Handbook for Impact Assessment.* Presented at International Association for Impact Assessment Conference, Marrakech, Morocco. June 2003

Grassetti, R. *CEQA and Sustainability.* Presented at Association of Environmental Professionals Conference, Palm Springs, California. April 2002.

Grassetti, R. and M. Kent. *Certifying Green Development, an Incentive-Based Application of Environmental Impact Assessment.* Presented at International Association for Impact Assessment Conference, Cartagena, Colombia. May 2001

Grassetti, Richard. *Report from the Headwaters: Promises and Failures of Strategic Environmental Assessment in Preserving California's Ancient Redwoods.* Presented at International Association for Impact Assessment Conference, Glasgow, Scotland. June 1999.

Grassetti, R. A., N. Dennis, and R. Odland. *An Analytical Framework for Sustainable Development in EIA in the USA.* Presented at International Association for Impact Assessment Conference, Christchurch, New Zealand. April 1998.

Grassetti, R. A. *Ethics, Public Policy, and the Environmental Professional.* Presented at the Association of Environmental Professionals Annual Conference, San Diego. May 1992.

Grassetti, R. A. *Regulation and Development of Urban Area Wetlands in the United States: The San Francisco Bay Area Case Study.* Water Quality Bulletin, United Nations/World Health Organization Collaborating Centre on Surface and Ground Water Quality. April 1989.

Grassetti, R. A. *Cumulative Impacts Analysis, An Overview.* Journal of Pesticide Reform. Fall 1986.

1986, 1987. Guest Lecturer, Environmental Studies Program, University of California, Berkeley.

LETTER 10: RICHARD GRASSETTI – GRASSETTI ENVIRONMENTAL CONSULTING

Response to Comment 10-1

The comment is an introductory statement and does not address the adequacy of the DEIR.

Response to Comment 10-2

The comment is a summary and does not address specifics in the DEIR. See the following Responses to Comments 10-3 through 10-92 for detailed responses.

Response to Comment 10-3

The commenter references Figure 2-1 on page 2-3. However, Figure 2-2 is on page 2-3. The shaded project area in Figure 2-2 refers to the development area that includes 190 acres of vineyard and other vineyard associated components. As noted in the Introduction chapter of this Final EIR, the development area for the project has been reduced to 173 acres. The north central portion of the site consists of grasslands, and is not part of the TCP area. The existing grassland area is not subject to a timberland conversion permit; however, this 19-acre area is included in the impact analysis contained in the DEIR, which considers the potential physical impacts resulting from the whole of the proposed project. Therefore, the timber conversion area (154 acres) is smaller than the development area (173 acres).

Response to Comment 10-4

A parcel map is not one of the project entitlements as illustrated in the section "Project Entitlements" on page 2-26 of the DEIR Project Description and revised in Response to 10-18 below. Furthermore, simply because an entitlement may involve County discretionary approval does not in and of itself establish the County as the appropriate lead agency. Per CEQA Guidelines Section 15051:

> Where two or more public agencies will be involved with a project, the determination of which agency will be the Lead Agency shall be governed by the following criteria:
> (a) If the project will be carried out by a public agency, that agency shall be the Lead Agency even if the project would be located within the jurisdiction of another public agency.
> (b) If the project is to be carried out by a nongovernmental person or entity, the Lead Agency shall be the public agency with the greatest responsibility for supervising or approving the project as a whole.
> (1) The Lead Agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose such as an air pollution control district or a district which will provide a public service or public utility to the project.
> (2) Where a city prezones an area, the city will be the appropriate Lead Agency for any subsequent annexation of the area and should prepare the appropriate environmental document at the time of the prezoning. The Local Agency Formation Commission shall act as a Responsible Agency.
> (c) Where more than one public agency equally meet the criteria in subdivision (b), the agency which will act first on the project in question shall be the Lead Agency.
> (d) Where the provisions of subdivision (a), (b), and (c) leave two or more public agencies with a substantial claim to be the Lead Agency, the public agencies may by agreement designate an agency as the Lead Agency. An agreement may also provide for cooperative efforts by two or more agencies by contract, joint exercise of powers, or similar devices.

CAL FIRE is the appropriate CEQA lead agency for this project under all of the standards set forth in Section 15051.

Response to Comment 10-5

As stated on page 2-4, the project objectives include "To take advantage of the site's unique topography and microclimate to produce premium quality grapes for Artesa's 'Sonoma Coast Estate Chardonnay and Pino Noir' wine program." In *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal. App. 4th 957, the court upheld the City's substantive decision to reject the evaluated alternatives in favor of the proposed project. The City's findings stated that each of the analyzed alternatives failed to meet certain project objectives, and was "undesirable from a policy standpoint." The court also upheld that an alternative involving only one component of a project is not required to be analyzed (i.e., an alternative that does not meet most of the basic objectives of a project). In so doing, the court confirmed that under CEQA, the objectives of the project proponent are relevant in selecting and evaluating project alternatives. Chapter 6 of the DEIR evaluates a reasonable range of alternatives to the proposed project, in compliance with CEQA.

Response to Comment 10-6

As stated on page 2-24 of the DEIR, the proposed project annual irrigation demand during vine establishment would be approximately 53 acre-feet per year. The proposed reservoir would hold approximately 73 acre-feet. In addition, as stated on pages 3.7-81 through 3.7-86 of the DEIR, Impact 3.7-6, project-related impacts to groundwater storage and recharge, the project would not utilize ground water for irrigation purposes and could be expected to increase groundwater infiltration rates by reducing evapotranspiration. Runoff capture would be unlikely to have an effect on groundwater recharge. Consistent with the conclusion in the DEIR, the proposed project impact to groundwater storage and recharge would be less-than-significant. See also Responses to Comments 7-14 and 7-15.

Response to Comment 10-7

Figure 1-1 of Chapter 1.0, *Introduction*, of this Final EIR consists of a revised Vineyard Plan for the proposed project.

As noted on page 2-19 of the *Project Description* chapter of the DEIR, "Earthwork cut and fill volumes are balanced, such that import or export of soil or bulk materials is not anticipated. A low permeability impoundment liner made out of a synthetic material would be installed to reduce seepage." In response to the comment, the following additional grading details are added to the end of "Phase III – Reservoir Installation" section on page 2-19 of the DEIR (See Chapter 2.0, Changes to the DEIR Text):

> Site development subject to ministerial County Grading and Drainage permitting will be undertaken for construction of the reservoir, sump, vineyard drain lines, drainage basins, and related incidental aspects of the Erosion and Sediment Control Plan. Balanced cuts and fills will be used on site, with no import or export of material. Estimated earthwork volumes are +-74,000 cy for the reservoir, +-

3,500 cy for the sump, and a few hundred cubic yards over approximately 30 additional sites for the detention basins.

Response to Comment 10-8

The corporation yard will serve as a staging area for daily viticultural operations, as well as for storage of supplies and equipment retained on site. The approximately 1-acre corporation yard has been relocated from vineyard Unit 1c to Unit 6, just south of the proposed irrigation reservoir, in order to address aesthetics and noise concerns expressed by the public in the comments on the DEIR (See Figure 1-1 in the Introduction chapter of this Final EIR). A residential-type water well will be drilled on the property, in the vicinity of the corporation yard. For water management purposes, a dark green poly tank about 10 feet in diameter and 6 feet high would be installed, capable of storing about 5,000 gallons of water. Water from a pump deep in the well would be pumped to storage. The tank would meet fire suppression needs as well as provide residual in the case of power outages. The water storage tank would be a maximum of 4-5 feet high and is not expected to be visible above the trellis and vine canopy. As explained on page 2-9 of the DEIR, the corporation yard well would only be used for washing and other incidental needs of vineyard workers.

A modest agricultural storage building may by installed, suitable for securing valuable or hazardous materials, tools, equipment, tractors, and general vineyard supplies. Required labor relations posters, announcements, and health and insurance flyers would be posted at the buildings. A worker preparation and cleanup area is anticipated, with perhaps a few picnic tables suitable for lunch breaks. Garbage will be collected and stored using appropriate bins.

Response to Comment 10-9

Determining the volume of timber to be removed is not a requirement of the Forest Practice Rules; accordingly, the RPF for the project has not cruised the on-site timber. What is required at this time by CAL FIRE is the total conversion area acreage, which is 154 acres for the Fairfax Conversion project, as noted in the latest version of the THP for the project (see Appendix C to this Final EIR). The volume of timber is constantly changing due to growth and die-off and therefore the acreage to be affected is used as a constant number. However, as part of the modeling efforts conducted for the GHG analysis (see Chapter 4 of the Partially Recirculated DEIR as well as Response to Comment 6-8 of this Final EIR), the total volume of timber to be removed from the project site per the THP has been *estimated* as 3,850,000 board feet (conifer) and 866,250 board feet (hardwood).

Response to Comment 10-10

Please see Response to Comment 4-13.

Response to Comment 10-11

Existing and proposed roadways within the project site are addressed in detail on page 2-18 of the DEIR. Temporary or permanent roadways within the property will not require an encroachment

permit. The existing property access from Annapolis Road is via a gravel driveway used by property owner Wellman on an easement basis. The entry is suitable for vineyard use in its present configuration and would not require an encroachment permit if it is not improved. If the owner elects to undertake improvements within the County right-of-way (i.e. paving the entrance), a ministerial encroachment permit would be required. Property access from Annapolis Road to Unit 1d is via an existing undeveloped driveway entry. The owner intends to shift the entrance easterly by about 100 feet for preservation of sensitive resources, requiring a ministerial encroachment permit from Sonoma County to do so.

Response to Comment 10-12

Please see Response to Comment 10-7.

Response to Comment 10-13

Please see the Chapter entitled, *Revisions to the DEIR Text*, for an updated "Timberland Conversion Operations Map" (Figure 2-12 of the Project Description chapter of the DEIR). As stated on page 2-18 of the DEIR, as revised in Chapter 2 of this Final EIR, existing erosion sites would be fixed as part of the project's improvements, as follows:

1. Elimination of a degraded ATV trail under power lines caused by unauthorized site users. The trail would be redeveloped as vineyard and drainage within Unit 1.
2. Installation of a rock armored outfall on an Annapolis Road culvert outside the vineyard. Hand placed rock armor will mitigate and prevent further enlargement of a small channel scour area in an area with negligible tributary area from roadside drainage.
3. Seepage control in abandoned skid road that has eroded and formed a semi-naturalized channel. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement below the reservoir site.
4. Groundwater and seepage control in an existing gully. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement downslope in a normally dry Ordinary Water reach below Unit 2.
5. Groundwater and seepage control in a second existing gully. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement downslope in a normally dry Ordinary Water reach below Unit 2.
6. An abandoned skid trail would be repaired below Unit 5. An overgrown and gullied skid trail would be shaped and outsloped. Surface water would be diverted from entering the site by shaping and periodic rolling dips or water bars installed to prevent accumulation of surface runoff on the trail.

The erosion areas would be improved through the implementation of the Erosion Control Plan. In addition, the remaining two comment points on the Timberland Conversion Operations Map -- 10 and 11 – represent two ephemeral channels that would be modified to allow for an all-season ford stream crossing. Rock would be used to construct these crossings; however, it would be installed in contour with the channel, assuring that the original flow capacity in the channel is not restricted in any manner or fashion.

Response to Comment 10-14

As sated on page 3.11-10 of the DEIR, Impact 3.11-4, impacts associated with light and glare from the proposed project's temporary seasonal lighting would be concentrated in small areas of the site at any given time. In addition, given the varied topography of the project site and the incorporation of approximately 151 acres of streamside buffers throughout the project site, much of the harvest machinery lighting would not be observable to the few residents in the site vicinity. As a result, the proposed project would have less-than-significant impact regarding light and glare.

Response to Comment 10-15

As stated on page 3.7-52 of the DEIR, irrigation run off would not occur with use of the drip system; irrigation system losses from a subsurface irrigation system such as the one proposed are limited to deep percolation. The West Yost Hydrologic Evaluation for the proposed project estimates efficiency of the proposed irrigation system to be 95 percent. Typical efficiency ratings for a subsurface irrigation system range from 85 to 95 percent (*Irrigation System Design – An Engineering Approach*, Cuenca, R.H., 1989).

Response to Comment 10-16

The proposed irrigation reservoir is a relatively large body of open water that will be lined. Vegetative growth will therefore be minimal to nonexistent. The lack of protected habitat and wind-driven circulatory currents will preclude any significant colonization by mosquitoes.

Response to Comment 10-17

As stated on page 3.10-8 of the DEIR, Impact 3.10-3, mechanical activities, including harvesting, were analyzed in the Environmental Noise Analysis in the event that mechanical harvesting is utilized instead of hand-picking crews. Based on a maximum noise level of 85 dB at a reference distance of 50 feet, Bollard & Brennan state in their Environmental Noise Analysis that operational noise levels could exceed the County's 70 dB noise level standard at sensitive areas (residences) located within 280 feet of the operating equipment during daytime hours, and within 500 feet of residences during nighttime hours, given the nighttime noise penalty of +10 dB. Consistent with the analysis and conclusions of the DEIR, with implementation of mitigations measures, the noise impacts related to operation of the vineyard would be less-than-significant.

Response to Comment 10-18

Should an equipment storage building be installed at the corporation yard, a County building permit will be required. An agricultural building exemption may be permissible for a simple storage shed. As discussed in Response to Comment 10-11 above, an encroachment permit will be needed for the access to Unit 1d. A use permit and lot line adjustment are not required for the proposed vineyard development. However, upon further review of the DEIR, Sonoma County's project entitlements listed on pages 2-26 and 2-27 in Chapter 2, *Project Description*, of the DEIR are hereby clarified as follows (See Chapter 2.0, Revisions to the DEIR Text):

Sonoma County

- ~~Ministerial – Erosion Control Plan~~
- Ministerial – Grading Drainage, and Erosion Control Plan ~~Permit~~
- ~~Ministerial – Erosion Prevention and Dust Control Plan~~
- ~~Ministerial – Conservation Easement Management Plan~~
- ~~Ministerial – Paleontological and Archaeological Resource Preservation Plan~~
- ~~Ministerial – Post-Construction Monitoring Plan~~
- ~~Ministerial – Channel Erosion and Sedimentation Basin Monitoring Plan~~
- ~~Ministerial – Agricultural Chemical Use and Storage Contingency Plan~~
- ~~Ministerial – Construction Traffic Management Plan~~
- Ministerial – Vineyard and Orchard Erosion Control Plan
- Ministerial – Agricultural Building Exemption/Permit (if building constructed)
- Ministerial – Well installation permit
- Ministerial – Driveway encroachment permit

Response to Comment 10-19

Please see Response to Comment 10-18.

Response to Comment 10-20

As noted on Page 3.2-4 of the DEIR, the proposed project is located in the Sonoma Coast/Gualala Basin Planning Area as designated in the Sonoma County General Plan. Although the commenter is correct that the property is designated for Resource and Rural Development ("RRD"), it is not correct that the RRD designation requires minimum parcel sizes of 640 acres for all projects.

The commenter is specifically directed to Sonoma County General Plan Policy LU-12j, which provides that within the Sonoma Coast/Gualala Basin Planning Area the County shall:

> Require a 640-acre minimum lot size for ***new parcels*** created in the "Land Extensive Agriculture" and "Resources and Rural Development" categories within the Coastal Plan boundary.

(Sonoma County General Plan Land Use Element, Page LU-53 (Amended December 8, 2009) (Emphasis Added).)

In the present case, the proposed project is not creating "new parcels" and, as such, is not subject to a 640-acre minimum lot size. Therefore, contrary to the commenter's suggestion, lot consolidation is not necessary and the project's existing RRD-40 zoning designation remains consistent with the site's RRD General Plan land use designation.

Response to Comment 10-21

Please see Response to Comment 4-18.

Response to Comment 10-22

Please see Response to Comment 10-20.

Response to Comment 10-23

The commenter states that the threshold of significance employed to assess the Project's emission of greenhouse gasses ("GHG") (i.e., "an action that would block implementation of an ARB established regulation to reduce GHG emissions") is inappropriate because ARB has not yet issued regulations to reduce GHG emissions. The commenter also states that the EIR improperly failed to look at available methodologies and significance criteria utilized in other jurisdictions to assess GHG impacts.

CEQA does not mandate that thresholds be developed or, if developed, applied without exception in evaluating the relative significance of impacts. (CEQA Guidelines, § 15064.7 (a) [sets forth *option* of adopting significance thresholds].) The standard of significance for GHG emissions established by CAL FIRE in the DEIR is qualitative and not quantitative. As referenced above, the Draft EIR defines a significant impact resulting from GHG emissions "as an action that would block the implementation of an ARB established regulation to reduce GHG emissions." (DEIR, p. 3.3-9.) The DEIR explains that this standard was applied because no other regulation/significance criteria exist that can provide more accurate analysis. (DEIR, p. 3.3-7.) The DEIR explains that the emissions thresholds ARB has created pursuant to AB 32 currently apply only to stationary source emissions. (*Ibid.*) In addition, the DEIR explains that the current standards for reducing vehicle emissions under AB 1493 also do not provide a quantified target for GHG emission reductions for vehicles. Finally, the DEIR explains that neither ARB nor the Northern Sonoma County Air Pollution Control District (NSCAPCD), the agency with permitting authority for stationary air pollutants in the region, have identified thresholds of significance for GHGs. (DEIR, pp. 3.3-8 – 3.3-9.)

The DEIR's GHG emissions significance criterion did not prevent CAL FIRE from conducting a thorough and accurate GHG analysis of Project emissions, which has been updated in Response to Comment 6-8 of this Final EIR and also presented in the Partially Recirculated DEIR for the Fairfax Conversion Project. In accordance with the CEQA Guidelines on GHG assessment, the DEIR contains a quantitative description and estimate of the amount of GHG emissions resulting

from a project. (See CEQA Guidelines, § 15064.4(a).) The DEIR assesses and analyzes carbon sequestration rates due to the conversion of forests and grasslands to vineyards and attendant uses. (*Ibid*.)

The commenter also states that the DEIR should have utilized the Draft CEQA Guidelines recently issued by the Natural Resources Agency for GHG assessment as the threshold of significance assessing the project's GHG emissions. As directed by SB97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010. CEQA Guidelines section 15064.4, states that, in determining the significance of greenhouse gas emissions, a "lead agency shall have the discretion to determine whether to use a quantitative approach or to "rely on a qualitative analysis or performance based standards." Given the challenges associated with determining a reasonable and proper quantitative significance criterion for GHG emissions when one does not yet fully exist, CAL FIRE exercised proper discretion (and acted in accordance with the CEQA Guidelines on GHG emissions) in utilizing a qualitative significance criterion for the current project.

Notwithstanding the lack of a governing GHG emissions threshold, as explained above, CAL FIRE, using the best available information available and acting in accordance with CEQA, established the above-referenced qualitative threshold to assess the significance of quantified project GHG emissions. (See CEQA Guidelines, § 15064.7(a) ["[a] threshold of significance is an identifiable quantitative, *qualitative* or performance level of a particular environmental effect…"] (italics added).)

Response to Comment 10-24

As stated in the DEIR, formal amphibian surveys were conducted on the project site in 2008. The comment states "Given their [bullfrogs'] life-cycle intolerance of intermittent or seasonal wetland conditions" corroborates the assertion that bullfrogs would not be found in the existing aquatic habitats on the project site. In fact, bullfrogs were not detected onsite in any aquatic habitat during Monk & Associates surveys. Subsequently, in the summer of 2009, Monk & Associates conducted U.S. Fish and Wildlife Service approved protocol surveys for the California red-legged frog (*Rana draytonii*) on the project site in accordance with the *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog*. [28] Bullfrogs were not observed on the project site during the field survey.

As part of the 2009 survey, Monk & Associates identified four ponds that occur within five miles of the project site. Three ponds are vineyard reservoirs and one is a man-made pond located within a forested habitat. Two of the three vineyard ponds are lined with impervious liners. The third reservoir was not lined and included indications of intensive vegetation control along the shoreline and within the reservoir. Liners in the lined ponds extended significantly higher

[28] USFWS (U.S. Fish and Wildlife Service). 2005. *Revised guidance on site assessments and field surveys for the California red-legged frog*. August 2005. 26 pps.

upslope (up to 60 feet) than water surfaces. Vegetation was not observed growing through the liners, thus lined reservoirs appear to be devoid of all vegetation, including both shoreline riparian vegetation and in-reservoir emergent marsh vegetation. Monk & Associates noted significant differences in the use of lined ponds by amphibians vs. unlined ponds. Lined reservoirs typically support relatively clear water and are devoid of emergent and shoreline vegetation. Wildlife observed in lined reservoirs included freshwater snails (Order: Gastropoda) and mosquito fish (*Gambusia affinis*). Monk & Associates concluded that Mosquito fish were placed into the ponds to control mosquitoes (Family: Culicidae) because the species is not naturally occurring. At the unlined reservoir, wildlife observed included Northern pacific tree frog (*Pseudacris regilla*) larvae and mosquito fish (*Gambusia affinis*). Bullfrogs were not observed at any of the surveyed adjacent vineyard ponds. Although bullfrogs could find the unlined reservoir, bullfrogs are unlikely to live in the lined reservoirs due to relatively sterile conditions. Bullfrogs were abundant in the pond located within a forested setting. The forested pond was replete with both emergent aquatic vegetation and shoreline riparian vegetation. Monk & Associates determined that while bullfrogs are naturalizing in freshwater ponds in the region of the project site, the lined vineyard reservoirs do not appear to provide suitable habitats for bullfrogs, most likely due to the absence of both emergent and shoreline vegetation that could support this species.

Per the Vineyard Plan as described in the Project Description Chapter of the DEIR, an impervious synthetic (16 millimeter HDPE) geotextile liner would be installed in the proposed vineyard reservoir on the project site. As with the existing reservoirs in the vicinity of the project site, the liner would prohibit the establishment of both emergent and shoreline riparian vegetation, thereby controlling the threat of establishment of bullfrogs.

Response to Comment 10-25

Please see Response to Comment 7-9 for a detailed response to the commenter's concerns.

Response to Comment 10-26

Herbicide Transport Concerns
Please see Responses to Comments 10-25 and 7-9 regarding herbicide application concerns.

Bullfrog Concerns
Please see Response to Comment 7-8 regarding bullfrog concerns.

Groundwater Concerns
Please see Responses to Comments 7-14 and 7-15.

Pond Turtle Concerns
Please see Response to Comment 7-11.

Gualala Roach Concerns
Please see Responses to Comments 7-11 and 12-10.

Foothill Yellow-Legged Frog Concerns
Please see Response to Comment 7-11.

Cumulative Impact Concerns Related to Biological Resources and Hydrology
Please see Response to Comment 7-11.

Response to Comment 10-27

Please see Response to Comment 7-17.

Response to Comment 10-28

Please see Response to Comment 7-18.

Response to Comment 10-29

Please see Response to Comment 7-19.

Response to Comment 10-30

Please see Response to Comment 7-20.

Response to Comment 10-31

Please see Response to Comment 7-21.

Response to Comment 10-32

Please see Response to Comment 12-5.

Response to Comment 10-33

Please see Response to Comment 12-4.

Response to Comment 10-34

Please see Response to Comment 12-5.

Response to Comment 10-35

Please see Responses to Comments 7-8 and 10-24.

Response to Comment 10-36

Please see Response to Comment 12-7.

Response to Comment 10-37

Please see Response to Comment 13-5.

Response to Comment 10-38

Please see Responses to Comments 10-37 and 13-5.

Response to Comment 10-39

Please see Responses to Comments 7-4 and 13-5.

Response to Comment 10-40

Artesa site-01 is located completely within a preserve area and is excluded from any proposed development. Any sub-surface investigation of this area would constitute unwarranted destruction of a portion of the site. Furthermore, as noted in Response to Comment 13-5, revised Mitigation Measure 3.5-2(d) requires the following for Artesa Site-01 out of an abundance of caution:

> Artesa Site-01
>
> 1. *No project or ground disturbing activities or impacts of any kind shall take place within the site boundaries. The site shall be clearly marked with highly visible fencing by the consulting archaeologist and/or his qualified designee(s) - in consultation with the Stewarts Point Rancheria THPO or his designee - prior to and during all ground disturbing timber harvesting and vineyard development activities. This fencing shall be maintained as necessary throughout ground disturbing activities within 100 feet of the site boundary. This location shall be clearly plotted on the project maps with specific and clear notations that this area is NOT to be encroached upon. In so doing, however, this location shall NOT be specifically labeled or identified as an archaeological site on the project maps in order to keep the identity and location of the site confidential and thus protect the site from damage by artifact hunters or vandals.*
>
> 2. *Although re-use of the existing seasonal road located approximately 150-200 feet to the northwest of the site is permitted, such use is restricted to ingress and egress – there shall be no mechanical grading or widening of the road.*
>
> 3. *A minimum 4-inch thick layer of gravel or other similar, suitable road rock material shall be placed (and maintained at that thickness throughout operations) on the 500-foot long segment of existing dirt road near Artesa Site-01.*
>
> 4. *Ground disturbing activities taking place within 100 feet of the site shall be monitored by a professional consulting archaeologist and the Stewarts Point Rancheria THPO or his designee(s). Prior to beginning operations, the scope of the monitoring shall be determined in consultation with the CAL FIRE Archaeologist and the Stewarts Point Rancheria THPO or his designee. When artifacts and/or other site indicators are encountered during operations, ground disturbing activities within 100 feet of the find shall be halted, and the provisions of*

14 CCR 929.3 implemented (which include promptly notifying the CAL FIRE Archaeologist about the find).

Response to Comment 10-41

As described in detail in Response to Comment 13-5, since the release of the DEIR for public review, a few previously unrecorded archaeological resources were identified during the June 2009 Pre-Harvest Inspection (PHI), which is a field meeting that is part of the Timberline Harvest Plan (THP) process, involving regulatory agencies. CAL FIRE and Origer & Associates decided, out of an abundance of caution, that additional detailed survey work should be performed. As a result, Origer & Associates conducted subsequent field surveys, which resulted in comprehensive survey coverage of the entire project site conducted on July 16 and 17, 2009. The results of Origer & Associates' additional comprehensive evaluation are presented in the Confidential Report prepared for CAL FIRE review and approval, entitled "An Archaeological Survey Report for the Artesa/Fairfax Timber Harvesting Plan," dated August 6, 2009. The reviewing CAL FIRE archaeologist provided internal comments on this report, after which Origer & Associates produced a revised report, dated May 6, 2010.

Neri's work was reevaluated in Origer's May 2010 report, which can be summarized as follows:

> **Artesa Isolate-01:** Isolated finds can contribute some information to prehistoric land use and hunting patterns. However, once their presence is documented no further work is warranted. The isolated find has been documented and no further investigation or protection is warranted. This item does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance.
>
> **Artesa Isolate-02:** Isolated finds can contribute some information to prehistoric land use and hunting patterns. However, once their presence is documented no further work is warranted. The isolated find has been documented and no further investigation or protection is warranted. This item does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance.
>
> **Noted Find-01:** Since Neri first made note of these flakes, members of Tom Origer & Associates revisited the mapped location in September 2006. This find location and surrounding area, especially the within the nearby proposed vineyard location, were searched twice by three individuals and no archaeological specimens were found. Ground surface visibility was good. Origer's conclusions were that no site is present or that the mapped location is in error.
>
> During Tom Origer & Associates resurvey of the project area in 2009 the location of Noted Find-01 was again searched and no specimens were found. It is likely that Neri saw isolated specimens and no further work is necessary. Because no items were found no determination of significance can be made.
>
> **Noted Find-02:** Since Neri first made note of this location, members of Tom Origer & Associates revisited the mapped location in September 2006. This find consisted of a

collapsed structure that appears to be modern. The structure location is within the proposed manzanita preserve. Because the structure is modern it does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance.

Noted Find-03: Since Neri first made note of this find, members of Tom Origer & Associates revisited the mapped location in September 2006. The structure location is within a proposed manzanita preserve. Because no diagnostic materials were present to relate this site to a person, event, or time period it does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance. Documentation of its presence is all that is required, which has been accomplished.

Noted Find-04: Since Neri first made note of this location, members of Tom Origer & Associates revisited the mapped location in September 2006. This find is outside of planned vineyard development. Because the area is excluded from the project no further investigation or protection is warranted. Because no diagnostic materials were present to relate this site to a person, event, or time period it does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance. Documentation of its presence is all that is required, which has been accomplished.

Noted Find-05: Since Neri first made note of these flakes, members of Tom Origer & Associates in revisited the mapped location in September 2006. This find location and surrounding area was searched twice by three individuals and no archaeological specimens were found. Ground surface visibility was good. Origer's conclusion is that no site is present and the mapped location is in error.

During Tom Origer & Associates resurvey of the project area in 2009 the location of Noted Find-05 was again searched and three widely scattered chert flakes were found in the area. After these flakes were found shovel probes were excavated to determine if a site was present. Specimens were not found in the shovel probes. Because of this it was determined that no site was present. It is likely that Neri saw isolated specimens and no further investigation or protection is warranted.

Noted Find-06: Since Neri first made note of this item, members of Tom Origer & Associates revisited the mapped location. After a thorough search of the area, no cultural items were found.

During Tom Origer & Associates resurvey of the project area in 2009 the location of Noted Find-06 was searched for and no specimens were found. It is likely that Neri saw isolated specimens and no further investigation or protection is warranted. Because no items were found no determination of significance can be made.

Noted Find-07: Since Neri first made note of this item, members of Tom Origer & Associates in revisited the mapped location in 2006. This item was found and Origer concurred with Neri's assessment that it is possible it was made with farming equipment. Regardless, it is an isolated specimen and its presence has been documented. No further

investigation or protection is warranted and no determination of significance can be made.

Noted Find-08: Since Neri first made note of this flake, members of Tom Origer & Associates revisited the mapped location in April 2008. After a thorough search of the area, no cultural items were found.

During Tom Origer & Associates resurvey of the project area in 2009 the location of Noted Find-08 was again searched and not found. Neri saw an isolated specimen and no further investigation or protection is warranted. Because no items were found no determination of significance can be made.

Noted Find-09: Since Neri first made note of the cross and bench the site was revisited in 2006. The cross was not relocated but the bench was. Origer concurs with Neri's findings that the bench is modern and no investigation or protection is warranted. Because the item is modern it does not meet NRHP, CRHR, or California Forest Practice Rules criteria for significance.

Response to Comment 10-42

Please see Responses to Comments 10-41 and 13-5.

Response to Comment 10-43

Please see Responses to Comments 10-39 and 13-55.

Response to Comment 10-44

The comment is unclear, as the commenter references Impact 3.5-2 and Mitigation Measure 3.5-3(a). However, as stated in the DEIR, although the known significant archaeological sites on the project site would be avoided, the project could contain unknown prehistoric sites that have yet to be discovered.

Grading crews, including temporary, migrant, and non-English speaking workers would be trained to recognize artifacts of cultural and historical significance by professionals competent in the necessary languages.

For clarification purposes, Mitigation Measure 3.5-3(a) has been revised as follows, as included in Chapter 3.5, *Cultural Resources*, of the Partially Recirculated DEIR:

3.5-3(a) *Prior to the issuance of grading permits, the applicant shall hire a qualified archeologist to prepare an archaeological monitoring plan for the review and approval ~~of the County Permit and Resource Management Department~~. by the CAL FIRE Northern Region-Coast Area Archaeologist and the Stewarts Point Rancheria THPO ~~(or his representative).~~ ~~At a minimum the plan shall cover the Neri "Noted~~*

~~*Find" locations and all areas within 100 feet of previously identified archaeological sites, including those sites.*~~ *The plan shall include, but not necessarily be limited to the following measures:*

- ~~*Any location with prehistoric Native American material shall require both a*~~ *Native American monitor(s) (representing the Stewarts Point Rancheria tribe and designated by the Stewarts Point Rancheria THPO) and an archaeological monitor(s) shall be present during all earth-moving activities associated with the proposed project.*
- *Historical features shall be considered historically significant if the feature is a discrete deposit identifiable to the period of significance for the two mills, or if the deposit relates to substantially earlier occupation and the agricultural activities on the project site.*
- *Prehistoric Native American deposits shall be considered an archaeological site if three or more cultural items are found within an area measuring roughly ten feet on a side.*
- *Archaeological deposits that retain a strong focus, that is the ability to clearly represent the activities that created the deposit, shall be considered to have sufficient integrity to meet the criteria for listing on the National Register.*
- *Identified sites shall be avoided by establishing construction fencing around the perimeter of ~~the~~ each site designated for this type of protection to prevent damage from vineyard development activities. Vineyard workers shall be trained regarding the importance of cultural materials.*
- *If the resources cannot remain in situ, ~~a program of investigation appropriate to the resource shall be developed. To the extent feasible, exiting research designs shall be incorporated into investigation programs.~~ Mitigation Measure 3.5-2(c) shall be implemented (i.e., Data Recovery Plan).*

~~*The Tribal Historic Preservation Officer for the Kashia Band of Pomo Indians has provided general information regarding the Kashia needs for monitoring and treatment of human remains. It is recommended that the project applicant enter into an agreed treatment plan with the tribe prior to beginning any ground disturbing activities in the project area.*~~

Please see Response to Comment 13-5 of this Final EIR for the current version of Mitigation Measure 3.5-2(c).

Response to Comment 10-45

The responsible professional, (Dr. Matt O'Connor, CEG #2449), evaluated potential groundwater impacts in the DEIR and is qualified to conduct such evaluations. Dr. Matt O'Connor has prepared more than twenty-five groundwater studies in the County of Sonoma in accord with General Plan Policy WR-2e (formerly RC-3h), as well as similar studies of water availability in other jurisdictions in northern California. The analysis of potential effects of the

project on groundwater in the DEIR is more than adequate in evaluating the significance of potential impacts. The analysis of potential groundwater impacts of the project is consistent with "Guidelines for Groundwater Investigation Reports, Board for Geologists and Geophysicists" (1998); and the introductory section of the Guidelines states that:

> *Individual reports may include the topics discussed in this outline as appropriate. Purposes of investigations vary and may require that portions of these guidelines be either omitted or addressed briefly…The professional performing, supervising or reviewing each investigation has a responsibility to determine what is appropriate and necessary in each case.*

As described in the DEIR, the project would collect and store winter surface runoff for vineyard irrigation during the growing season. Groundwater would not be used for irrigation purposes.

As stated in the DEIR, an onsite well would be used to provide potable water for workers for drinking water and cleanup. The DEIR provided an estimated groundwater use rate of 20 gallons per day (gpd). However, as stated in Response to Comment 10-50 of the Final EIR, the estimated annual groundwater demand is 120 gpd for one month during harvest season and 20-45 gpd for another 11 months and totals less than 20,000 gallons per year, equivalent to about 0.057 acre-feet. For comparison, annual domestic water use for a single family home is approximately 0.5 to 1 acre-feet/year. Anticipated annual groundwater use for the proposed project would be less than 10 percent of a typical single family home.

The California Department of Water Resources estimated that the aquifer in this area stores about 3.1 acre-feet/acre (See page 8 of Appendix M to the DEIR). The project site includes approximately 100 acres of aquifer material, which could store approximately 300 acre-feet of groundwater storage. The proposed project annual demand would be approximately 0.03 percent of estimated aquifer storage. Furthermore, because the topographic and groundwater gradients in the project area flow away from most neighboring wells through the project site towards Patchett Creek and the project is anticipated to increase water available for infiltration and percolation, the impacts to wells in the vicinity would be minimal, if any (See pages 3.7-16 through 3.7-19 of Chapter 3.7, *Hydrology and Water Quality*, of the DEIR and pages 7-12 of Appendix M to the DEIR).

Response to Comment 10-46

The locations of Node 1 and Node 2 in Tables 3.7-4 and 3.7-5 of the DEIR are shown on Figure 3.7-8 of the DEIR. Node 1 and Node 2 were assigned by West Yost and Associates. The data from nodes in Table 3.7-6 are shown in Figure 3.7-4 of the DEIR and were assigned by O'Connor Environmental. As shown in Figures 3.7-4 and 3.7-8, N1 and Node 1 are located at different locations.

Response to Comment 10-47

The commenter asserts one isolated example as a basis for the comment of a poorly organized section. However, page 3.7-28 of the DEIR refers the reader to Chapter 3.4 for an in depth

discussion of potential impacts to salmonids resulting from the changes to the onsite hydrologic condition associated with the proposed project. Impact 3.4-14 of the DEIR discusses the potential impacts to special-status species salmonids from project-related decreases in instream base flows.

Response to Comment 10-48

Please see Response to Comment 12-5.

Response to Comment 10-49

The commenter's reference to the "Protection of Natural Habitat" is in error and appears to refer to the "Protection of Natural Hydrograph" section, which is relevant to the impact in question (i.e., impacts to surface water quality from vineyard-related erosion and sedimentation) as downstream peak flows affect sedimentation and water quality. Other information included in Impact 3.7-3 in the pages referenced by the commenter is directly relevant to the vineyard's potential impacts to surface water quality, such as the sections entitled "Onsite Drainage Sensitivity to Increased Peak Flows", "Sediment Yields at Project Boundaries", "Patchett Creek Sediment Yield Estimates – Method 1 (Using Existing Data and Field Observations", etc. The impact discussion demonstrates that with implementation of BMPs included in the design of the vineyard project, a net reduction in annual Patchett Creek sediment yield would occur.

Response to Comment 10-50

For clarification purposes, the "Effects of the Proposed Domestic Well" section on pages 3.7-85 and 3.7-86 in Chapter 3.7, *Hydrology and Water Quality,* of the DEIR have been revised to read as follows:

> Effects of the Proposed Domestic Well
>
> Water for washing and other incidental needs of vineyard workers would be provided by a small, low-yield well located at the corporation yard on the north side of Annapolis Road. The applicant would install a 1,000- to 5,000-gallon water tank, although water use would be of a seasonal nature and be unlikely to exceed 20 gallons per day for off-season use during about 11 months out of the year.
>
> Peak use would be at harvest, with water demand projected as follows: For a 30-day harvest season, average picking rate would be 130-acre net vineyard/30 days = 4.3 acres/day. If this were to be completed in a daily morning 4-hour time block, about 1.1 acres per hour would need to be picked. If a worker fills a 40 lb lug in 10 minutes, that is a picking rate of 240 lb/hour (2,000/240 = 8.3 laborers can pick a ton an hour). A high yield of 4 tons per acre for premium grapes would therefore require 8.3 laborers to remove the fruit in a 4-hour period. Assuming a driver and foreman, and reducing the picking rate by 10% to account for breaks and inefficiencies increases the required labor pool to 8.3*1.1 + 2 => +-11-man crew. If the picking rate was doubled, a 22-man crew could cover the property in 15 days.
>
> Grapes are typically harvested before noon to take advantage of cooler weather and the required transportation and handling later at the winery. Assuming 2 gal/worker/day x 22

workers is still only about 44 gal/day for labor needs, assuming no liquids are brought on site. Assuming laborer washup at 2 gpd would add another 44 gal/day for peak season needs.

Equipment washup or dust removal might be practiced on an occasional basis, at perhaps 100 gal/day once or twice a week. For 210 gal/week over 7 days, this would add about 30 gpd to the design load.

The peak season well demand for a 15-day period would therefore be on the order of 44+44+30 = 118 gpd, and much less during most of the year. Sonoma County regulations for residential well yield would not apply, but are never-the-less instructive. Sonoma County regulations require a well yield of 1 gpm. Based on this minimum yield, the design volume would be provided within 2 hours of operation in a 24-hour period. During winter months, with a 5-person crew and a consumptive use of 1 gpd, the rate would decline to 5*(1+2) = 15 gpd for staff and perhaps 30 gpd for other incidental uses.

Annual well demand at 120 gpd for 1 month and 20 - 45 gpd for another 11 months totals less than 20,000 gal/year, equivalent to about 0.057-acre foot (326,264 gal = 1-acre foot) On-site deep percolation in only the +-33.5-acre vineyard sheet flow collection area is estimated at 26-acre feet. Projected well demand and associated potential for overdraft is therefore insignificant in terms of local groundwater supplies and recharge potential.

The proposed well is located hundreds of feet from any existing neighboring wells. For such wells, the County considers performance data confidential. Productivity data would be obtained by the driller during installation and is not likely to represent actual well capacity due to type and condition of pumping and plumbing apparatus, use history of the well, and other unknown geologic factors that may affect capacity over time. There would be no way to independently assess accuracy of anecdotal information provided by adjoining well owners; and more localized impacts have been demonstrated to be insignificant in terms of groundwater impacts.

A water storage tank is a necessary and prudent component of a well and pump system. The storage tank provides reserve capacity in the event that the power is out for an extended time, and can be set up to minimize the duty cycle of the pump. In some cases, County regulations would require the domestic tap at mid-level and an emergency use tap at the bottom of the tank to guarantee water availability for fire suppression purposes. The fire suppression storage volume would not need to be considered in well yield assessment because it is a one-time fill that remains in passive storage until time of need, which would occur only for highly intermittent fire suppression purposes.

Groundwater wells in the Annapolis area typically utilize the Ohlson Ranch Formation, a sedimentary rock formation found on ridgetops and that overlies the Franciscan Formation. The Ohlson Ranch Formation is relatively thin, ranging from about 20 to 160 thick. Saturated thickness of the aquifer accessible in wells is typically about 100 ft and well depth is typically about 200 ft. Well yields range between 2 and 36 gallons per minute (gpm), and some wells go dry in fall months (DWR, 1975). Well yield in the Ohlson Ranch aquifer is typically less than 10 gpm based on several proprietary well records reviewed for other projects in the Annapolis area. Wells may also penetrate the Franciscan Formation; however, the yield for the best wells in this aquifer is limited to a few gallons per minute in most locations.

Well yields in the range of several gallons per minute can in some circumstances support vineyard irrigation for ~~relatively~~ small acreages~~., but are not well suited for extensive irrigation. Assuming that annual vineyard irrigation rates would be 0.5 feet per acre of vineyard, each 1 gpm of well yield could irrigate 1 acre of vineyard if the well is pumped continuously for about 113 days. Hence, a 10 gpm well could be used to irrigate about 10 acres of vineyard, provided the well could support continuous pumping for such a lengthy period and ignoring pumping costs.~~ A well yielding 1 gal/min provides 10,080 gal/week when operated continuously. For a typical vineyard spacing of 7 feet x 4 feet using an industry standard of 5 gal/vine/week, the 1556 vines/ac require 7,780 gal/week. The well operated 24-hours/day would have the theoretical capacity of irrigating about 1.3 acres. By ratio comparison, a 10 gal/min well would have the theoretical capacity of irrigating about 13 acres on an annual cycle. Actual irrigation coverage would be much less, perhaps half the theoretical value, because few wells can perform at full rated capacity under a continuous duty cycle. This approach also requires additional infrastructure in the form of storage tanks and irrigation pumps, because the supply timing and rate does not conform with irrigation distribution timing and rate.

In order to irrigate 130 acres planted vineyard using wells alone, at least 20 wells at 10 gpm and a 50% duty cycle would be required, as would a large tank farm to store the pumped groundwater. More wells would be required to irrigate directly than to fill the 73 acre-foot reservoir as discussed below, because the irrigation season is shorter than the available reservoir refill season. Neither CAL FIRE nor the project proponents believe vineyard irrigation using groundwater pumping is practical, cost-effective, or politically or environmentally feasible.

Well water could ~~conceivably~~theoretically be used to fill the proposed 73 ac-ft reservoir. An acre-foot is 326,264 gallons. A one (1) gpm well operated continuously produces 43,200 gal/30 days, and would produce one acre foot in 7.55 months. By proportion, a 10 gpm well would produce 10 acre feet in the same time period. To fill the 73 acre-foot reservoir, it would take 15 wells at 10 gpm and a 50% duty cycle operated over about eight months to provide the required volume. ~~As noted above, a 1 gpm well can produce about 0.5 ac-ft of water in a 113 day period of continuous pumping. A well with a yield of 10 gpm could produce 5 ac-ft in the same period; about 15 such wells pumped for about 30% of the year would be required to fill the 73 ac-ft reservoir.~~ While sufficient groundwater could be available in the aquifer to support this level of withdrawal, the expense of developing and pumping this number of wells would be considerable. CAL FIRE and the roject proponents do not believe this water development approach is practical, cost-effective, or politically or environmentally feasible. Rather, a passive, low impact surface sheet flow runoff collection system has been designed for collection and storage of the required 73 acre feet of irrigation water.

~~To provide sufficient water for vineyard irrigation, several wells of above-average capacity would be required. The cost of development of such a network of wells would be considerable, and would be in addition to the cost of development of the surface runoff collection system and storage reservoir that is intended to supply water for irrigation. If more abundant groundwater were available in the area, irrigation supplies from wells might have been considered; the expense of developing the surface collection facilities should be a sufficient indication of the intent of the project proponent to utilize surface runoff water rather than groundwater for vineyard irrigation.~~

Response to Comment 10-51

Please see Response to Comment 10-45.

The comment asserts that a water resource investigation is required to comply with General Plan Policy WR-2e (former RC-3h), which concerns groundwater supply. Pursuant to Chapter 25B of the County Code ("Water Wells"), the applicant would be required to obtain a ministerial permit to construct the domestic well. The applicable part of the Code is as follows:

> *Sec. 25B-3.*
> *(a) Permit Required. No construction or reconstruction of a well ["Well" means any artificial excavation constructed into the earth by any method, for the purpose of extracting or recharging groundwater, excluding oil, gas, and geothermal wells"] shall be commenced on any property nor shall any well be destroyed until a permit to do such work shall have been first obtained from the administrative authority, except in the event of an emergency, affecting health, life or crops, or livestock, a licensed contractor may start work immediately and shall notify the administrative authority by telephone of the work being done and make written application for a permit on the next regular business day thereafter.*

The applicant would be required comply with Chapter 25B County Code, and provide the required documentation pertaining to groundwater resources per General Plan Policy WR-2e, as described in the DEIR (cf. pages 3.4-112 through -114) if well construction of the above-mentioned type is deemed necessary.

Response to Comment 10-52

Please see Response to Comment 10-50.

Response to Comment 10-53

As stated on page 3.7-86 of the DEIR, the cost of development of a network of wells would be considerable, and would be in addition to the cost of development of the surface runoff collection system and storage reservoir that has been designed to supply water for irrigation. The expense of developing the surface collection facilities should be a sufficient indication of the intent of the project proponent to utilize surface runoff water rather than groundwater for vineyard irrigation. See Response to Comment 10-50.

Response to Comment 10-54

The commenter asserts that potential sediment and hydrologic impacts have not been fully evaluated for portions of the project area lying outside the Patchett Creek drainage. These portions of the project area are fully analyzed at the site scale as described in the hydrologic assessment (DEIR Appendix M) and the erosion assessment (DEIR Appendix N). In Appendix M of the DEIR, these areas are shown in Figure 6 (p.25). The hydrologic evaluation for these areas is summarized in Appendix M, Table 6 (p.30). These areas are referred to as sub-basins N1 (comprising 23 acres draining to an unnamed tributary of the Wheatfield Fork lying to the

west of Patchett Creek), N7 and N62 (comprising 41.9 acres and 9.5 acres, respectively, and draining to Grasshopper Creek to the north of Patchett Creek). These areas are also separated and analyzed in the erosion analysis (Appendix N, Tables 2, 4 and 5, p. 6-10). These analyses show that potential project impacts on the portions of the project area lying within the Grasshopper Creek watershed and the unnamed Wheatfield Fork tributary are comparable to those expected in the Patchett Creek drainage.

Watershed-scale effects of the project were evaluated for Patchett Creek because almost all of the project area is located in that watershed -- 124 acres of the approximate 160 gross vineyard acres are located in Patchett Creek. This represents 11 percent of the 1,124-acre Patchett Creek watershed. In contrast, project gross vineyard acres in the unnamed tributary of the Wheatfield Fork and Grasshopper Creek are 14 and 22 acres, respectively. The unnamed tributary has an area of 525 acres, while Grasshopper Creek has a drainage area of 1,952 acres. Proposed project vineyard acreage represents 2.7 and 1.1 percent of these drainages, respectively. The analysis of potential project impacts at the watershed scale in Patchett Creek, where 11 percent of the drainage area is to be developed, concluded that impacts would be less than significant. Potential watershed-scale project impacts on the unnamed tributary of the Wheatfield Fork and Grasshopper Creek are mitigated by the same vineyard erosion control measures, including sedimentation basins. Three sedimentation basins are proposed in the Grasshopper Creek drainage and two are proposed in the unnamed tributary of the Wheatfield Fork.

Based on the small proportion of project vineyard acreage contributing to these two watersheds (2.7% in the unnamed Wheatfield Fork tributary and 1.1% in Grasshopper Creek), the low level of watershed scale impacts in Patchett Creek, where 11% of the watershed area would be project vineyard, and the application of the same erosion control measures proposed for the project (See pages 1-50 to 1-66 of the DEIR), it was concluded that watershed scale impacts in the other two watersheds would not be significant. Furthermore, post-project monitoring for hydrologic and erosion effects include one channel in the Grasshopper Creek watershed as well as monitoring of 25% of the sedimentation basins.

The portion of the project area that will be utilized as the "corporation yard" is located in the Patchett Creek drainage, and therefore does not contribute any additional level of uncertainty on potential project impacts on Grasshopper Creek or the unnamed tributary.

Response to Comment 10-55

Please see Response to Comment 10-54.

Response to Comment 10-56

The commenter implies that the applicant must, pursuant to Chapter 11 of the County Code, obtain a permit for the project stormwater drainage facilities, which include a reservoir that will redirect stormwater flows in order to minimize sedimentation. On December 12, 2009, the County Board of Supervisors adopted Ordinance No. 5819, which redesignated and amended the former Chapter 11 (cited by the Commenter) to Chapter 11A "Stormwater Management." As part of its amendments, the County repealed the specific permit requirement cited by the

commenter and adopted a requirement that person(s) seeking to release non-stormwater discharges into the County's stormwater system obtain a National Pollution Discharge Elimination System ("NPDES") permit and comply with its terms and conditions. (County Code, § 11A-5.) This requirement, in turn, is incorporated in the DEIR as Mitigation Measure 3.7-2(h). (See DEIR, p. 3.7-58.) This mitigation measure provides as follows:

> *Prior to issuance of grading permits, the applicant shall obtain applicable NPDES permits from the North Coast Regional Water Quality Control Board and comply with all applicable programs. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation: the SWPPP shall be provided for the review and approval of the SWRCB.*

(*Ibid.*) The applicant will, pursuant to Mitigation Measure 3.7-2(h), obtain an NPDES permit for all stormwater flows, assuring compliance with Chapter 11A of the County Code.

It is further noted that the County, in adopting Ordinance No. 5819, added Section 19-16 to the County Code. This new section provides that no person shall "[i]mpair or impede or obstruct the natural flow of storm water or other water running in a watercourse or cause or permit the obstruction of a watercourse." (County Code, § 19-16(a)(1).) Section 19-16 defines a "watercourse" to mean "any stream, or any manmade channel constructed to facilitate the use of water or convey storm water." (County Code, § 19-16(b).) Here, the project includes the construction of a 73 acre-foot reservoir and sump occupying approximately nine acres to supply the proposed vineyard with water. As the DEIR explains, the runoff capture system supplying the proposed reservoir would only utilize diffused surface flows, and would not draw water from any channel or watercourse on the project site. (DEIR, p. 2-9.) For this reason, the proposed runoff capture system is not prohibited by County Code Section 19-16.

Response to Comment 10-57

Please see Response to Comment 16-6.

Response to Comment 10-58

Please see Response to Comment 16-8.

Response to Comment 10-59

Please see Response to Comment 16-9.

Response to Comment 10-60

The DEIR includes a detailed analysis of the traffic impacts related to harvesting and vineyard development, including the transportation of log hauling. In addition, Mitigation Measure 3.9-2 requires the project applicant to prepare a Construction Traffic Management Plan prior to any logging taking place on-site, which would include plans for temporary traffic control, signage and striping, location points for ingress and egress of logging vehicles, staging areas, and timing of logging activity which appropriately limits hours during which large construction equipment may be brought on or off the site.

Response to Comment 10-61

In response to the commenter's general question, Dr. Don Clark, Artesa Vineyard Manager, has confirmed that double-gondola trucks will be able to navigate Annapolis Road and other public access roads in and around the project site.

In response to the commenter's second question, the DEIR notes that the following truck trip distribution is anticipated:

- 30 percent of traffic using Annapolis Road would travel to and from the north on SR-1.
- 30 percent of traffic using Annapolis Road would travel to and from the south on SR-1.
- 5 percent would travel to and from the surrounding areas.
- 5 percent of traffic using Stewarts Point Road would travel to and from the north on SR-1.
- 30 percent of traffic using Stewarts Point Road would travel to and from the south on SR-1.

(DEIR, at Page 3.9-12.) The commenter is further directed to Figure 3.9-4 of the DEIR, which provides a graphic representation of the truck trip distribution.

Response to Comment 10-62

It is not necessary to add a passenger-car-equivalent to Table 3.9-3 of the DEIR as the trip generation table appropriately includes trips from employee vehicles and truck trips.

Response to Comment 10-63

The comment expresses concern that the project standards of significance mischaracterize the County Noise Element and in support includes the Sonoma County Noise Element Table NE-2. However, the professional noise consultant, Bollard Acoustical Consultant, determined that the commenter incorrectly interprets the Table NE-2 standards. The following discussion provides detail regarding the intent and proper application of the Sonoma County standards.

As identified in Table NE-2 of the Sonoma County Noise Element, the allowable level of noise at a residential use is determined by the duration the noise is generated at a given level. Higher noise levels are allowed provided that the higher levels are generated for a relatively short

period. The standards are specific to the duration a certain noise level generated, not the duration a certain activity takes place.

The commenter concludes that because daytime tree removal and grading, and nighttime harvesting operations, could occur for more than 30 minutes per hour, all noise generated by those activities would be subject to the Table NE-2 standards of 50 dB during daytime hours and 45 dB during nighttime hours (the Table NE-2 standards applicable to noise levels generated for more than 30 minutes per hour). The interpretation is incorrect because the noise generation of the activities are time-varying (i.e. not steady-state or fixed at a constant level).

Because the noise generation of the activities are time-varying, the highest (maximum) noise level of the activities would appropriately be compared against the highest (maximum) noise level standard of Table NE-2 (the Category 5 standards which are applicable to noise present for between 0 and 1 minute per hour), not the standards applicable to noise levels which are exceeded for more than 30 minutes per hour (Category 1 standards).

Similarly, elevated noise levels due to project activities which are present for between one and five minutes per hour should be compared against the Category 4 standards, levels present for between five and 15 minutes per hour would be compared against the Category 3 standards, levels present for between 15 and 30 minutes per hour would be compared against the Category 2 standards, and levels present for more than 30 minutes per hour would be compared against the Category 1 standards.

As explained above, the proper interpretation of the Table NE-2 standards requires consideration of the duration of time a certain elevated level of noise is actually present during a given hour, not the duration of time an activity which generates a range of noise levels takes place in any given hour. The distinction is subtle but important, and the following example is provided in an attempt to illustrate the BAC's interpretation of the standards.

Example: Consider a hypothetical project pump which switches on and runs for an entire daytime hour. In this example, assume the initial start-up surge of the pump generates a brief noise level spike of 68 dB at the nearest residential property line which lasts for only a few seconds. After the initial surge, the pump in this example quickly settles into steady-state operation, generating a constant noise level of 49 dB at the residential property line for the remainder of the hour.

Analysis: Using the commenter's interpretation of the County standards, the pump would be in violation of the County's noise standards because the brief 68 dB spike associated with the start-up surge exceeded 50 dB, which is the County daytime standard applicable to noise levels which are present for more than 30 minutes out of the hour. But although the pump did operate for more than 30 minutes out of the hour in this example, the level of 68 dB was present for less than one minute. As a result, the elevated noise level generated by the initial pump surge would be more appropriately assessed relative to Category 5 of the County Noise Element Table NE-2, which allows daytime noise levels between 65 dB and 70 dB provided those levels are not present for a cumulative duration of more than 1 minute out of the hour.

> Because the level of 68 dB resulting from the initial pump startup surge in this example was present for less than one minute out of the hour, BAC's interpretation of the Noise Element Table NE-2 standards is that the pump did not exceed the standards because the standards are based on the duration of time a certain noise level is generated, not the duration of time a certain activity is taking place. Furthermore, the outcome of this example is reasonable, as it is highly unlikely that a noise impact would result from a brief noise level increase lasting a few seconds in an otherwise quiet hour of pump operations.

Although the project noise generation would not be as simple as the pump example provided above, the example does indicate that the maximum noise generation of the project should not be compared against the Category 1 median (level exceeded more than 30 minutes per hour) noise level standards of County Noise Element Table NE-2. For the assessment of noise impacts for the Fairfax Conversion project DEIR, understanding the noise generation of the project would be time varying is important. As a result, the most direct and accurate means of assessing noise impacts is through use of the absolute maximum noise level limit contained in Table NE-2.

The DEIR utilized the County's maximum noise level limit to perform a direct "apples to apples" comparison of maximum noise levels generated by the project against the County's maximum noise level standards. The maximum noise level standards, which represent Category 5 of the County Noise Element Table NE-2, are reproduced on Page 3.10-6 of the DEIR, under the heading "Standards of Significance". In addition, the Category 1 standards of Noise Element Table NE-2 are also provided in this section to bracket the range of noise levels considered acceptable by the County.

Because the noise generation of the project would vary by time and location of noise-producing activities, the most reliable standard to apply to this project is the County's maximum (Category 5) noise level standards, as the standards provide an absolute threshold against which project noise levels are assessed, regardless of the duration of time the maximum noise level limits are exceeded. Utilization of the Category 1-4 standards would require precise information pertaining to the time-varying nature of the project noise-sources. Because the number of variables associated with the development of that information, the use of that information with the Category 1-4 standards could lead to either an overstatement, or understatement, of potential project noise impacts. The more reliable indicator of noise impacts for this project would be the maximum standard, which is represented by Category 5. Because the Category 5 standards were used to assess project noise impacts, no additional analysis of project impacts using the less reliable Category 1-4 standards is warranted.

Response to Comment 10-64

This comment suggests the DEIR evaluate specific noise-sensitivity of the Starcross Monastic community. Page 3.10-3 of the DEIR, first paragraph under the heading, "Existing Land Uses in the Project Vicinity", addresses the presence of the Starcross Monastic Community to the immediate north of the project site on the opposite side of Annapolis Road.

Section 3.1 of the Sonoma County Noise Element states the following with respect to the County's noise level performance standards of Table NE-2:

> "Noise level performance standards in Table NE-2 below are to be applied as performance standards for noise producing uses which may affect noise sensitive land uses and vice versa."

Policy NE-1c of the Sonoma County Noise Element states the following with respect to the County's noise level performance standards of Table NE-2:

> "The total noise level resulting from new sources and ambient noise shall not exceed the standards in Table NE-2 as measured at the exterior property line of any affected residential land use."

The two sections of the Noise Element indicate that noise-sensitive land uses and residential land uses are subject to the noise standards of Table NE-2. The County Noise Element does not contain separate noise level standards which are specific to monastic communities. The DEIR noise impact assessment assumed that the Noise Element standards applicable to noise-sensitive land uses (the Table NE-2 standards), would apply to the Starcross Monastic Community. Because the assessment of potential project noise impacts considered the proximity of all neighboring noise-sensitive land uses, the Starcross Monastic Community was included in the DEIR assessment.

The DEIR determined, in Impact 3.10-2, that because the decibel scale is logarithmic, a doubling of traffic on local roadways (i.e., a 100 percent increase in volume) would correspond to a 3 dB increase in ambient noise levels. However, as noted in the traffic study, the proposed project would be expected to result in a maximum traffic volume increase of 30 to 32 percent on local roadways during the harvest season, resulting in a maximum predicted traffic noise level increase of only 1.5 dB over existing baseline levels. This level of increase is well below the 5 dB traffic noise significance threshold used for the analysis. Therefore, the impact would be considered ***less-than-significant***. While the traffic associated with the project would not create adverse noise impacts to surrounding receptors, the DEIR did determine, in Impact 3.10-3, that the mechanical harvesting activities associated with the project could have potentially significant noise impacts to nearby receptors. The DEIR identified Mitigation Measure 3.10-3 to reduce the temporary operational noise impact to a less-than-significant level.

It should also be noted that the approximately 1-acre corporation yard has been relocated from vineyard Unit 1c to Unit 6, just south of the proposed irrigation reservoir, in order to address aesthetics and noise concerns expressed by the public in the comments on the DEIR (See Figure 1-1 in the Introduction chapter of this Final EIR).

Response to Comment 10-65

The comment requests that noise from chainsaws and logging trucks be included in the DEIR analysis. Section 3.10-1 of the DEIR specifically addresses the noise generation of project site preparation, and states that preparation includes clearing of trees and vegetation. Although the construction noise sources and related maximum noise generation of those sources contained in

DEIR Table 3.10-3 do not specifically include chainsaws, the table provides a representative range of noise sources and activities which are typically involved in project site preparation of this nature, rather than a complete list of every potential construction noise source. In addition, removal of vegetation by bulldozers is not uncommon.

If chainsaws are used extensively at the site, the noise generation of saws would depend on the type of saw used. Although variable, chainsaw noise would be expected to range from approximately 100 to 110 dB Lmax at the chainsaw operator's ear (http://www.agrisafe.org/user/File/noisegraphs1.pdf, http://www.hse.gov.uk/pubns/as8.pdfm, http://www.commerce.wa.gov.au/Worksafe/Content/Safety_Topics/Noise/Further_information/Chainsaw-Noise_management_data.html, http://www.kent.ac.uk/safety/noise.html).

Given a noise level range of 100-110 dB at the operator's ear, conservatively assumed to be three feet from the saw, the maximum noise level at a distance of 50 feet would be approximately 75-85 dB assuming an attenuation rate of six dB per doubling of distance from the source (standard attenuation rate for a point source of noise). The range of noise levels would be below the maximum noise level of 87 dB Lmax at a 50 foot reference distance shown in Table 3.10-3. As a result, the use of chainsaws on the project site would not be anticipated to result in noise impacts of greater magnitude than generated by sources of noise included in DEIR Table 3.10-3. In addition, the maximum noise level generated by logging trucks is anticipated to be below the level generated by bulldozers.

Noise impacts associated with project site preparation and construction were identified in the DEIR, and Mitigation Measure 3.10-1 was specifically developed, which states the following:

> *3.10-1* *Timber harvest and vineyard construction activities shall be restricted to the hours of 7:00 am to 4:00 pm Monday through Saturday. Construction shall be prohibited on Sundays. In addition, all heavy construction equipment and all stationary noise sources (such as diesel generators) shall be fitted with factory-specified mufflers; and equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from residences in existence at the time of EIR certification as is feasible. These criteria shall be included in the improvement plans submitted to the Sonoma County Permit and Resource Management Department prior to initiation of construction.*

Significant noise impacts are not anticipated from such activities, including noise generated by logging trucks and chainsaws, as equipment noise would be minimized through the use of mufflers and other measures, and timber harvest and vineyard construction would be temporary in nature and limited to daytime hours by Mitigation Measure 3.10-1.

With respect to the portion of the comment pertaining to reconsideration of construction noise impacts in terms of the County's Noise Element Table NE-2 standards, the commenter is referred to the Response to Comment 10-63 which specifically pertains to the Noise Element standards.

Response to Comment 10-66

The comment requests that nighttime noise from mechanical harvesting equipment be included in the DEIR analysis. Impact 3.10-3 of the project DEIR discusses the potential noise impacts associated with mechanical harvesting operations during nighttime operations, and concludes that the impact could be potentially significant. As a result, Mitigation Measure 3.10-3 was required to reduce this potential impact to a less-than-significant level, as follows:

> *3.10-3 In order to minimize noise impacts to residences surrounding the project site during grape harvest season, mechanical harvesting operations shall be limited as follows:*
>
> - *Daytime mechanical harvesting operations shall be limited to areas at least 280 feet from residences in existence at the time of EIR certification; and*
> - *Nighttime mechanical harvesting operations shall be limited to areas at least 500 feet from residences in existence at the time of EIR certification.*
>
> *These criteria shall be included in the improvement plans submitted to the Sonoma County Permit and Resource Management Department prior to initiation of construction. These criteria shall be implemented unless it can be demonstrated through noise level measurements conducted by a qualified environmental noise consultant that such activities do not result in exceedance of the Sonoma County interior noise level standards.*

With respect to the portion of the comment pertaining to reassessment of operational noise in terms of the County's Noise Element Table NE-2 standards, the commenter is referred to the Response to Comment 10-63 which pertains to the Noise Element standards.

Response to Comment 10-67

The comment requests that Mitigation Measure 3.10-3 be expanded to include off-trucking of grapes prior to 8 am. Impact 3.10-2 states that four heavy truck trips would be generated by the project each day during harvest season to haul the harvested grapes. The truck trips would equate to two truckloads per day, as each load generates two trips (one trip by the empty truck arriving the site and a second by the full truck departing the site). Given the very low level of project heavy truck traffic generation, more than one truck trip is not likely to occur in any given nighttime hour. Bollard Acoustical Consultants used file data for slow-moving, fully-loaded heavy truck passby operations, to determine the average noise level associated with a single truck passby would be less than 50 dB Leq at a distance of 50 feet from the passby route. Based on the low noise level and very low number of nighttime operations, noise impacts associated with the arrival or departure of heavy trucks during nighttime hours are not considered significant.

Response to Comment 10-68

As noted on page 3.11-9, extensive vineyard areas are located northeast and east of the project site along Annapolis Road. Several residential properties surround the project site as well, including the Starcross Monastic Community (34500 Annapolis Road) located north of the project site, and six rural residences located immediately northwest, west, and south of the project site. The project site is currently devoid of development, and views of the site from nearby residences consist of forest and grassland scenery.

Starcross owns approximately 16 acres maintained as a grassed unused pasture just south of Annapolis Road. The parcel runs east-west for about 1800' (0.34 mi.) along the road on the north central boundary of the vineyard work area. It ranges from 230' - 500' in depth and is situated on a north-facing slope rising to a gentle ridge crest to the south that parallels the road. The combination of rising grassed terrain and distance from the road will effectively screen the major portion of the heart of the vineyard from observation by incidental traffic on Annapolis Road. Residents and guests of Starcross will have a similar view.

Rather than being able to see all of the proposed vineyard blocks, these individuals would continue to have views of the grassy knoll along Annapolis Road. The 1-acre corporation yard will not be visible from Annapolis Road or from any point on the Starcross Monastery, including the Chapel on the hill. The approximately 1-acre corporation yard has been relocated from vineyard Unit 1c to Unit 6, just south of the proposed irrigation reservoir, in order to address aesthetics and noise concerns expressed by the public in the comments on the DEIR (See Figure 1-1 in the Introduction chapter of this Final EIR).

Proposed vineyard blocks would be more readily visible along the western portion of the project site. As stated in the DEIR on page 3.11-9, the proposed project would not involve the construction of numerous buildings or result in urbanization, so implementation of the project would result in a change from one rural setting (timberland) to another (vineyard), thereby preserving the "openness" of the project site. Because Annapolis Road is not included among the scenic corridors listed by the General Plan (See Figure 3.11-1), the conversion of second-growth timberland to vineyard would result in ***less-than-significant*** impacts to views of the project site from Annapolis Road.

The project has sought to accommodate neighbor concerns about selected aspects of the viewshed. In deference to Starcross, a cluster of tall, partially-visible redwood trees immediately south of their buildings and some 900'-1500' distant in the lower central portion of Unit 2 was voluntarily excluded from the timber conversion area. Similarly, three tall many-stemmed second-growth redwood clusters located near the vineyard sump were excluded from development by increasing channel offsets and adjusting the sump location. Preservation of these redwood clusters and others within riparian preserve areas will serve to enhance the inherently pleasing visual complexity at the vineyard - forest interface.

Although the proposed project would alter the existing views of timberlands, a substantial number of trees would remain on the project site as the total conversion area is 154 acres (see

Appendix C to this Final EIR for the latest version of the THP for the project) and the total property acreage is 324.

The project site is not a continuous forest; rather it occurs in an existing mosaic of habitats including annual grassland, a former orchard that is now annual grassland, and forest/woodland that is primarily dominated by tan oak, with smaller remnant stands of Douglas fir and redwoods. The project site forest is already significantly disturbed by past activities of man, and does not constitute a contiguous forest, unless micro habitats are a consideration. An important consideration is that the forested habitat that occurs on the project site was clear cut approximately 50 to 60 years ago. The north end of the project site was planted to apples in the late 1800s and was tended as an apple orchard until the 1950s or 1960s. Also, there are residences located on all sides of the project site, except to the south, where existing second growth and cut forested habitats remain. There is also an existing olive orchard immediately north and an existing vineyard immediately east of the project site. Finally, the community of Annapolis occurs immediately west of the project site. The project site is not in a pristine or undisturbed setting and it should not be characterized as such.

In the absence of specific standards within planning documents, impacts to viewsheds are highly subjective. Vineyards are considered to be a highly valued landscape within Sonoma County. The 2020 General Plan Open Space Element defines vineyards as a scenic resource of special importance to the County:

> Coastal bluffs, vineyards, San Pablo Bay, the Laguna de Santa Rosa and other landscapes are of special importance to Sonoma County. Preservation of these scenic resources is important to the quality of life of County residents and the tourists and agricultural economy. Other features such as the Mayacamas and Sonoma Mountains provide scenic backdrops to communities. As the County urbanizes, maintenance of the openness of these areas provides important visual relief from urban densities. These landscapes have little capacity to absorb very much development without significant visual impact.

(General Plan 2020, Open Space Element, § 2.2; see also Draft EIR, p. 3.11-9 ["[V]ineyards are considered to be a highly valued landscape in Sonoma County"].)

In context, the proposed project would have a ***less-than-significant*** impact to views from adjacent residences.

Response to Comment 10-69

Please see Response to Comment 10-68.

Response to Comment 10-70

The commenter speculates that two months of nighttime lighting for grape harvesting operations could disturb surrounding landowners and thus result in a significant and unmitigable impact. The DEIR clearly explains that nearby residents will have very limited exposure to light emanated from the seasonal harvesting operations, if any, due to the mountainous terrain of

much of the project site, and the incorporation of approximately 151 acres of streamside buffers throughout the project site. (DEIR, p. 3.11-1.) Based on this factual evidence (i.e., limited light sources contained by visual barriers), the DEIR properly concludes that the project will have less-than-significant impacts regarding light and glare. (*Ibid.*) See also Response to Comment 10-68 above.

Response to Comment 10-71

The commenter questions why only a portion (750 acres) of the Preservation Ranch project was considered in the cumulative impacts assessment. As indicated in the DEIR, the basis for determining the geographic scope of the various cumulative impact assessment areas is outlined in CEQA Guidelines section 15130(b)(3), which dictates that the geographic scope vary depending on the type of impact discussed. Utilizing those guidelines it was determined that the watershed assessment area include Grasshopper Creek, Little Creek, and Annapolis Watersheds, as only projects within these watersheds would combine with the proposed project to result in a potentially significant cumulative impact. Only 750 acres of the Preservation Ranch project occurs within this defined watershed. The remaining portion of the Preservation Ranch project is located outside of the assessment area and would not have the potential to combine with the proposed project to result in a significant cumulative impact.

Response to Comment 10-72

Table 4-1, Timber Harvest Plans in the Project Area Watersheds, on pages 4-4 to 4-6 of the DEIR, provides a list of timber harvest plans filed in the Annapolis, Little Creek, and Grasshopper Creek watersheds over the last 10 years. The list includes both the Roessler and Sleepy Hollow Conversions, though these projects are no longer being actively processed and the environmental review of said applications has ceased. In addition, the DEIR notes that a proposal has been made by Premier Pacific Vineyards to develop approximately 1,861 acres of vineyard in the area. Approximately 750 of the 1,861 acres fall within the assessment area of the Fairfax Conversion Project THP and are considered to be part of the cumulative setting.

This cumulative setting is evaluated in Impact Statement 4-1 of the DEIR, which concluded:

> The proposed project would replace the existing timberlands with a vineyard, the project is consistent with the types of allowable uses (agricultural) allowed on the project site by the General Plan. As a result, the changes in land use would be consistent with the General Plan. It should also be noted that the proposed project would place 133 acres of sensitive habitats, archaeological sites, and buffer areas in conservation easements which would ensure that they remain forested in perpetuity. Furthermore, as stated above, the loss of timber is largely an issue of resultant impacts to special-status species and water resources. These issues are addressed in Sections 3.4 and 3.7 of this EIR, respectively. Therefore, the proposed project's incremental contribution to the significant cumulative land use impacts is not cumulatively considerable, resulting in a ***less-than-significant*** impact.

As noted elsewhere in this Final EIR, the total on-site forest reserve area is now 151 acres, not 133 as originally noted in the DEIR.

Response to Comment 10-73

See Response to Comment 10-72. The conclusion acknowledges that the proposed project would contribute to a cumulative land use impact. However, the proposed project's incremental contribution to cumulative impacts would be less than cumulatively considerable. The loss of timber is largely an issue of resultant impacts to special-status species and water resources. These issues are addressed in Sections 3.4 and 3.7 of the DEIR, respectively. Air quality and visual impacts are addressed in Sections 3.3 and 3.11 of the DEIR, respectively. In addition, the cumulative impacts related to air quality, climate change, visual impacts, biological resources, and water resources are discussed in Chapter 4.0, *Cumulative Impacts*, of the DEIR. The conversion of the project site from timberland to vineyard uses is an allowable use for the project site in the Sonoma County General Plan. Consistent with conclusions in the DEIR, the project's incremental contribution to the significant cumulative land use impacts is not cumulatively considerable, resulting in a ***less-than-significant*** impact.

Response to Comment 10-74

Please see Responses to Comments 10-72 and 10-73.

Response to Comment 10-75

A standardized, California-wide methodology to establish an appropriate baseline, such as a project-level (regional GHG emissions) inventory, to evaluate the significance of GHG emission changes has yet to be established. As of the writing of the DEIR, when the thresholds of significance to analyze the project's impacts were being developed, the agencies with jurisdiction over air quality regulation and GHG emissions such as ARB and the Northern Sonoma County Air Pollution Control District (NSCAPCD) had not established significance thresholds, standards, or analysis protocols for the assessment of greenhouse gas emissions and climate change.

To the extent the commenter contends CAL FIRE should apply thresholds utilized by other lead agencies, CAL FIRE was not required to do so. As discussed in Response to Comment 10-23, each lead agency for a project has discretion to determine the significance of the project's impacts, which includes determining applicable thresholds of significance. (See Pub. Resources Code, § 21080.1(a) [lead agency determines whether EIR is required for project, and that determination is binding on responsible agencies].) Further, OPR's Technical Advisory entitled, *CEQA and Climate Change Addressing Climate Change Through California Environmental Quality Act (CEQA) Review* acknowledges that no statewide thresholds have been established, and states that "[a]s with any environmental impact, lead agencies must determine what constitutes a significant impact….individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Lead agency discretion to select a proper significance threshold for assessing GHG emissions is also specifically allowed under the amended CEQA Guidelines for assessing GHG emissions that were issued by the Natural Resources Agency.

As explained in Response to Comment 10-23, CAL FIRE applied a qualitative threshold of significance, which is expressly allowed under CEQA. Utilizing project-specific scientific and factual data presented in the Draft EIR on pages 4-14 through 4-16, as revised in Response to Comment 6-8 of this Final EIR and Chapter 4.0 of the Partially Recirculated DEIR prepared for the Fairfax Conversion Project, CAL FIRE comprehensively analyzed the extent to which the project would increase or reduce GHG emissions when compared to the existing environmental setting. Based on this analysis, and exercising careful judgment, CAL FIRE determined that the project would have less than significant GHG emissions. This approach is expressly contemplated under CEQA and the CEQA Guidelines (See CEQA Guidelines, § 15064(b) ["The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data."].)

The commenter also suggests the DEIR should be revised to analyze off-site alternatives. The DEIR contains a comprehensive analysis of offsite alternatives. (DEIR, p. 6-17.) These offsite alternatives, in accordance with CEQA, are designed to achieve most of the basic objectives of the project and to reduce potentially significant environmental impacts. Thus, the assessed offsite alternatives also include the conversion of timberland to vineyards, and would differ only from the proposed project in the location of the conversion area. (*Ibid.*)

Finally, the commenter requests that the DEIR be revised to add mitigation such as the purchase of offsets and reforestation of other sites. As explained more comprehensively in Response to Comment 10-23, the DEIR properly concludes that the project will have less than significant impacts associated with GHG emissions. Accordingly, additional mitigation is not required.

Response to Comment 10-76

Please see Response to Comment 10-39.

Response to Comment 10-77

Please see Response to Comment 10-33.

Response to Comment 10-78

Please see Response to Comment 10-33.

Response to Comment 10-79

Please see Response to Comment 10-50.

Response to Comment 10-80

Please see Response to Comment 10-60.

Response to Comment 10-81

Please see Response to Comment 10-68.

Response to Comment 10-82

The comment is a conclusion. Please see the above response to specific comments which demonstrate that all issues raised by the commenter have been adequately addressed in the EIR for the project, and mitigation measures incorporated where necessary.

Response to Comment 10-83

Please see Responses to Comments 10-37 to 10-44 and responses to Letters 13 and 14.

Response to Comment 10-84

Please see Responses to Comments 10-37 to 10-44 and responses to Letters 13 and 14.

Response to Comment 10-85

For clarification purposes, page 6-11 of the DEIR, second paragraph is revised as follows:

> The No Project – Timber Resource Management Alternative would consist of timber harvest and restocking of the areas proposed for vineyard conversion under the proposed project. Because the project site is currently rarely accessed by vehicles, the No Project – Timber Resource Management Alternative would result in short-term traffic impacts similar to the proposed project during timber harvesting periods. ~~No Project – No Action Alternative would not generate traffic, and would therefore not result in adverse effects to the local roadways and intersections. Furthermore, implementation of the No Project – No Action Alternative would not affect alternative modes of transportation.~~ The primary difference between the No Project – Timber Resource Management Alternative and the proposed project would be the reduction of vehicle trips related to vineyard operations, maintenance, and harvesting. Therefore, like the proposed project the No Project – Timber Resource Management Alternative would be unlikely to result in substantial adverse effects associated with transportation and circulation due to the low trip generation. However, the proposed project would also not result in significant adverse affects related to transportation; therefore, the No Project – Timber Resource Management Alternative ~~No Project – No Action Alternative~~ would result in transportation impacts similar to the proposed project.

Response to Comment 10-86

Please see Response to Comment 10-5.

Response to Comment 10-87

Figure of 6-5 on page 6-18 of the DEIR shows the high value areas for Pinot Noir. The Preservation Ranch area was not identified as a high value area for Pinot and thus unsuitable as a proposed project offsite alternative.

CEQA Guidelines Section 15126.6(a) states that the an EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible. As required by CEQA Guidelines Section 15126.6(c), the DEIR included a reasonable range of potentially feasible alternatives: No Project – No Action Alternative; No Project - Timber Resource Management Alternative; Offsite Alternative; and Reduced Acreage Alternative. The DEIR includes a sufficient range to allow decision-makers to make a reasoned choice.

Response to Comment 10-88

Please see Response to Comment 10-87.

Response to Comment 10-89

Please see Response to Comment 10-87. Development of 173 acres of vineyards on a 200-acre site is highly unlikely in the Sonoma County Area. Large alternative sites would require land use restrictions (cultural biological, etc), greater than five percent of the gross area. Therefore, consistent with the analysis, the requirement of a 300-acre alternative is reasonable.

Response to Comment 10-90

While the project site contains some eligible resource sites, all such sites are being avoided/preserved, which may not be feasible at other offsite locations.

Response to Comment 10-91

Please see Responses to Comments 10-5 and 10-87.

Response to Comment 10-92

Regarding the project's protection of cultural resources, please see Responses to Comments 10-37 to 10-44 and responses to Letters 13 and 14. For carbon sequestration, see Response to Comment 6-8 of this Final EIR and the Partially Recirculated DEIR prepared for the Fairfax Conversion Project. Regarding the adequacy of the EIR's alternatives analysis, see Responses to Comments 10-5 and 10-87.

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Letter 11

July 28, 2009

To: Mr. Allen Robertson
California Department of Forestry and Fire Protection
P.O. Box 94426
Sacramento, CA 94244-2460

Re: Fairfax Conversion Project Draft Environmental Impact Report (Draft EIR)

11-1 The Forest Protection Committee of the Redwood Chapter of the Sierra Club wishes to comment on the potential environmental effects of approving a Timberland Conversion Permit and Timber Harvesting Plan for the proposed Fairfax Conversion Project. We have been following the course of such vineyard conversion proposals for many years. We have the gravest misgivings about the environmental deficiencies inherent in the Fairfax proposal. We will outline some of our criticisms below.

11-2 **Environmental harms:** conversion of forests to intensive agriculture causes fundamental changes in ecological and physical processes that maintain the quality of water, land, and air. These include: a) disruption of wildlife corridors and habitat fragmentation; b) groundwater depletion; c) downstream flooding; d) pollution to fresh water sources caused by pesticides/herbicides, fertilizer, and sedimentation; e) sub-surface hydrologic flow changes; f) water diversions; g) re-contouring of slopes; h) deep soil disruptions; i) increased peak flows in streams, causing stream bank failure and mass wasting of land; j) microclimate changes affecting plants and animals; k) harm to endangered species and habitat depletion; l) aesthetic impacts; m) increased infrastructure needs and costs (roads and increased traffic, emergency and fire services, etc.); n) the contribution of deforestation to global warming.

11-3 With particular regard to the last point: in 2006 Governor Schwarzenegger signed AB 32, which requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California's greenhouse gas emissions by 25 percent by 2020. We do not believe that this bar can be reached if the Department of Forestry and Fire Protection continues to approve the conversion of forest to development and agricultural uses at an alarming rate, using such meagre 'standards' for carbon sequestration and GHG reduction as are exemplified in this DEIR, in the section of the DEIR titled “The Cumulative Contribution to Global Climate Change”.

We note that the Department of Forestry recognizes the important role which forests play in carbon sequestration and in the lessening of global warming. For example CDF's 2003 FRAP Report, Chapter 5. Forests and Climate, states that " 'Human activities are influencing the

Letter 11 Cont'd

chemistry of the Earth's atmosphere in ways that are not fully understood but which could ultimately affect forest ecosystems in significant ways. The buildup of greenhouse gases is accelerated by fossil fuel burning, *deforestation*, livestock production, *agricultural activities*, and the widespread use and release of chemical compounds such as CFCs - (Report of the United States on the Criteria and Indicators for the Sustainable Management of Temperate and Boreal Forests, USDA Forest Service, 1997)' [Emph. added]. The report continues "California's forests are an important contributor to global carbon cycles and act to help regulate climatic changes.... Forests play an important role in the earth's carbon cycle. On one hand, the loss of forests on a global scale to other uses *(deforestation) is responsible for up to one-third of carbon emissions to the atmosphere, and ranks second only to the burning of fossil fuels as a source of CO2 emissions*. On the other hand, *forests serve as a huge carbon sink*: they capture CO2 from the atmosphere through photosynthesis and store it as carbon in wood and other carbon-based compounds in soil, in understory plants, and in the litter on the forest floor. *Large amounts of additional carbon could be stored in U.S. forests, including those in California*. [Emph. added]."

11-3 Cont'd

But in stark contradiction to CDF's own findings above, the Fairfax DEIR states that "the proposed project would have a ***less-than-significant*** impact on climate change." Furthermore, this unwarranted claim is argued for with reasoning which is misleading, incomplete, and unclear. Employment of such a standard by CDF would allow for the approval of almost any deforestation/ forest conversion project.

11-4

For more detailed specifics of these concerns, please see the attached comments submitted by Registered Professional Forester, Tom Gaman on behalf of the Forest Protection Committee. Mr. Gaman is certified by the California Climate Action Registry.

11-5

"Government protection should be thrown around every wild grove and forest on the mountains, as it is around every private orchard, and the trees in public parks. To say nothing of their value as fountains of timber, they are worth infinitely more than all the gardens and parks of towns." - John Muir, founder of the Sierra Club.

Future generations should never have to ask: "Why is Sonoma County part of the Redwood Empire?"

Sincerely

Jay R. Halcomb

Jay Halcomb, Chair
Forest Protection Committee
Redwood Chapter, Sierra Club

Attachment: Review of Fairfax DEIR, "The Cumulative Contribution to Global Climate Change", by Thomas Gaman, Registered Forester #1776

LETTER 11: JAY HALCOMB – SIERRA CLUB, REDWOOD CHAPTER

Response to Comment 11-1

The comment is an introductory paragraph and does not specifically address the adequacy of the DEIR.

Response to Comment 11-2

Disruption of wildlife corridors and habitat fragmentation

Please see Response to Comment 15-12.

Groundwater depletion

Please see Response to Comment 12-5.

Downstream flooding and Increased peak flows in streams, causing stream bank failure and mass wasting of land

Impact 3.7-7 of Chapter 3.7, *Hydrology and Water Quality*, of the DEIR discusses the impacts pertaining to peak runoff flows and exposure of people or structures to flood hazards. As stated in the DEIR, the results of the HEC-1 model analysis indicate that the peak discharge flow would slightly increase due to the modified land use. However, it should be noted that further downstream from the nodes evaluated, the increase in flow would decrease significantly, comprising an even smaller fraction of total flow, and impacts to runoff flows would therefore be reduced. In addition, the O'Connor Hydrologic Analysis found that taking into account the reservoir, peak surface runoff for the 15 minute, 2-year design storm at the project boundary would be expected to decrease by 9 percent under proposed project conditions where approximately one-third of the drainage area is affected by reservoir collection. At the point in the Patchett Creek watershed where all portions of the project area are contributing runoff, the expected peak flow changes are expected to be negligible.

In summary, the hydrologic evaluation found that project-related peak flow increases are anticipated to be minor and did not identify potential flood hazards that could result from implementation of the proposed project.

> The largest predicted increase was calculated at five percent over existing conditions at the Node 1 measurement location in a two-year storm if water is not routed to the onsite reservoir. Overall peak flow for the analysis area in aggregate increases about 9 percent if the reservoir is full and runoff is routed through the sump to Drainage Node 20. If the reservoir is being filled, then the aggregate change in peak runoff is an increase of about 6 percent. Furthermore, the Hydrologic Evaluation did not identify potential flood hazards that could result from implementation of the proposed project. Therefore, the impact would be considered ***less-than-significant***.

Furthermore, peak discharge for high-magnitude, low-frequency flows (> 5 yr recurrence interval events) under current conditions indicate that the largest increases in peak flows (2 yr recurrence interval events) predicted under project conditions would be well within the range of flows transmitted by the existing channels in most locations. Hence, the potential for significant channel erosion related to peak flow change is limited by several factors.

Pollution to fresh water sources caused by pesticide/herbicides, fertilizer, and sedimentation

Please see Response to Comment 7-9.

Sub-surface hydrologic flow changes and Water Diversions

Please see Response to Comment 15-7 concerning sub-surface hydrologic flow. Regarding water diversions, it is important to note that the project includes the construction of a 73 acre-foot reservoir and sump occupying approximately nine acres to supply the proposed vineyard with water. As the DEIR explains, the runoff capture system supplying the proposed reservoir would only utilize diffused surface flows, and would not divert water from any channel or watercourse on the project site. (DEIR, p. 2-9.)

Re-contouring of slopes

Re-contouring of slopes will primarily be conducted for the reservoir, which will involve estimated earthwork volumes of +-74,000 cubic yards.

Vineyard blocks on site will be developed on hillside slopes ranging from nearly level to about 25 percent. Most hillside slopes on the property are typically in the range of 5 to 20%. Some areas with lesser slopes are located on ridge top areas, and small inclusions of greater slope on larger hillside areas have been incorporated where surrounded by lesser slopes or where necessary to accommodate efficient field layout, terrace design, or equipment operation.

The row layouts will generally be at an angle relative to slopes, with regularly spaced intermittent cross slope drainage ditches provided in some blocks and sheet flow controls in other blocks. Where used, shallow low-slope vee ditches of suitable capacity will drain to a pipe collection system used convey the water down slope to a detention basin and armored discharge points in existing natural channel areas.

Hillsides of similar slope with similar soils on nearby properties have been successfully developed without significant erosion on a large scale basis. Many vineyards of up to 30% are farmed perpendicular to slope when adequately drained, cover cropped, and operated under no-till conditions with crawler-type equipment.

As noted in the Erosion Control and Mitigation Plan prepared for the proposed project (See Appendix B for the current version), temporary sediment control on hillside slopes will include the following improvements on an as-needed basis: a contour furrow will be constructed at base of the hill, with a companion fiber roll to collect surface runoff and minimize sediment loss from

hillside. Any concentrated runoff will be directed to a sediment catch basin at the contour furrow outfall, with piped outfall of sediment-free water to the channel below.

After vineyard improvements are completed, slopes will be planted with appropriate erosion control grasses. Erosion control revegetation will be completed prior to October 15.

Deep soil disruptions

Soil ripping would not occur as part of the timber harvest operation, but would be included as part of the vineyard installation. Only shallow ripping of 18 to 24 inches would occur as opposed to deep ripping of 4 to 5 feet, as noted in the Erosion Control and Mitigation Plan.

Increased peak flows in streams, causing stream bank failure

Please see Response to Comment 7-11.

Microclimate changes affecting plants and animals

The commenter does not specifically state the types of microclimate changes they think may occur as a result of the project. As demonstrated throughout the DEIR, particularly in the *Hydrology and Water Quality* Chapter, Chapter 3.7, and the *Biological Resources* Chapter, Chapter 3.5, all impacts to special-status plants and animals would be less-than-significant with implementation of the mitigation measures identified in the DEIR.

Harm to species and habitat depletion

As demonstrated throughout the *Biological Resources* Chapter of the DEIR, and the relevant responses in this Final EIR (See particularly the responses to Letter 1 from the California Department of Fish and Game), all impacts to special-status plants and animals would be less-than-significant with implementation of the mitigation measures identified in the DEIR.

Aesthetic impacts

Please see Response to Comment 10-68.

Increased infrastructure needs and costs (roads and increased traffic, emergency and fire services, etc.

The DEIR adequately addresses fire hazards and the associated demand for service in Impact 3.8-5:

> As shown in Figure 3.8-1, the project site is located within an area with moderate or high potential for large wildland fires. The terrain around Annapolis is rugged, with steep slopes below the semi-level ridgetop. The area is heavily vegetated with timber, grassland, and chaparral, and summer and fall climatic conditions are warm and dry. As such, the area has been identified as having a seasonal moderate to high fire hazard. Therefore, the possibility exists for wildland fires

to have an adverse effect on the project site. The site is considered to be wildland, and CAL FIRE is the agency responsible for fire suppression.

Following the timber harvest, any remaining woody material not suitable for commercial use would be piled and/or chipped onsite. During vineyard operations all pruned vegetation would be chipped and spread as mulch, and burning would not occur. Therefore, although the project would not be expected to result in an adverse impact related to the creation of fires, because the project site is identified by CAL FIRE as a moderate to high fire hazard area, the impact of wildland fire on the proposed project, including employees associated with the project, would be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would mitigate potential impacts to a *less-than-significant* level:

3.8-5 *A fire hazard reduction zone shall be observed along those portions of the timberland conversion area that are adjacent to Annapolis Road, a county maintained public road. The fire hazard reduction zone shall extend 100 feet from the edge of Annapolis Road. Within this zone, slash created and trees knocked down by road construction or timber operations shall be treated for fire hazard reduction by lopping, piling and burning or removal from the zone. Lopping used within a fire hazard reduction zone shall consist of severing and spreading slash so that no part of it remains more than 30 inches above the ground.*

The level of traffic being added to the surrounding roadways as a result of project traffic would not be expected to degrade roadway surfaces requiring substantial repairs. As stated on page 3.9-15 of the *Transportation and Circulation* Chapter of the DEIR,

Due to the short duration of pruning and harvesting operations and the limited number of vehicles required to transport project personnel, this traffic would not significantly change current traffic patterns along the local roadways. Nor would the addition of a maximum of three commercial truck trips per day, for a maximum of one month per year, be expected to result in a significant adverse impact on current traffic patterns along the project haul routes.

The contribution of deforestation to global warming

Please see Response to Comment 6-8.

Response to Comment 11-3

Please see Response to Comment 6-8.

Response to Comment 11-4

The commenter refers to the letter submitted on the Fairfax Conversion DEIR by Tom Gaman. Please see responses to Letter 9 of this Final EIR.

Response to Comment 11-5

The comment does not address the adequacy of the DEIR.