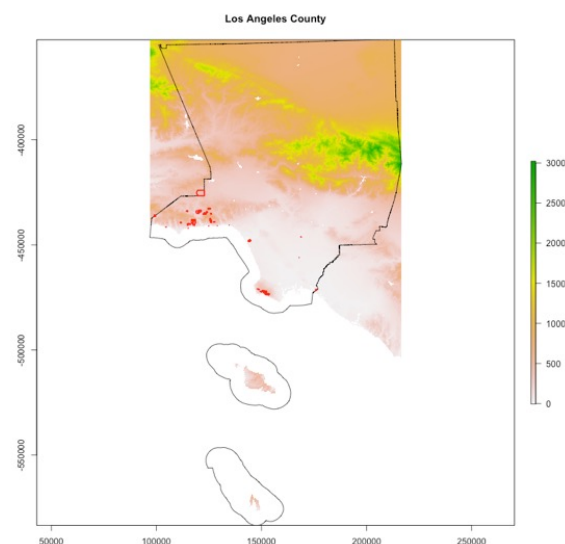
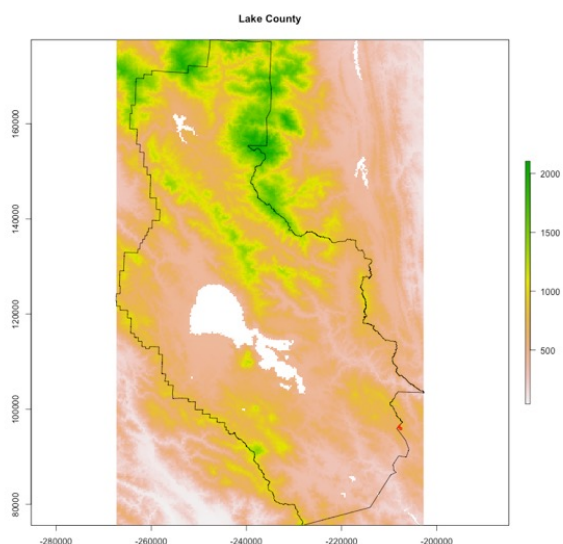
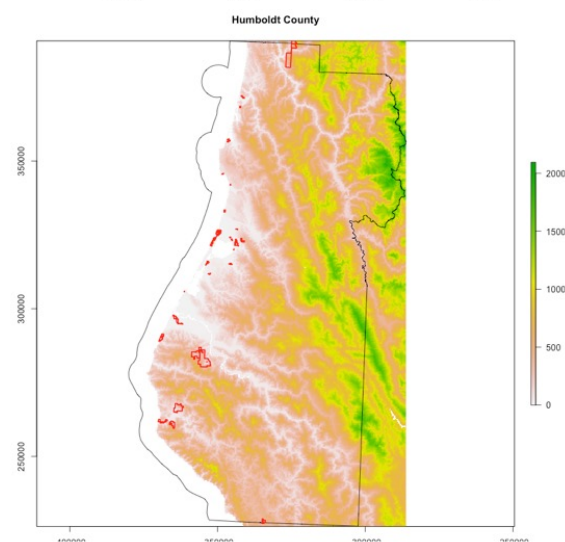
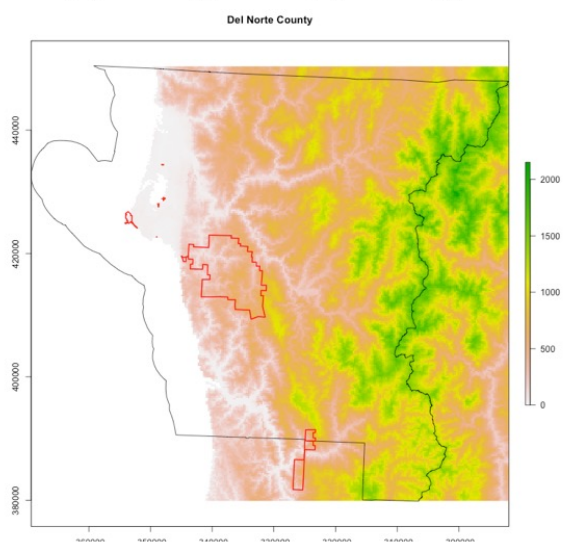
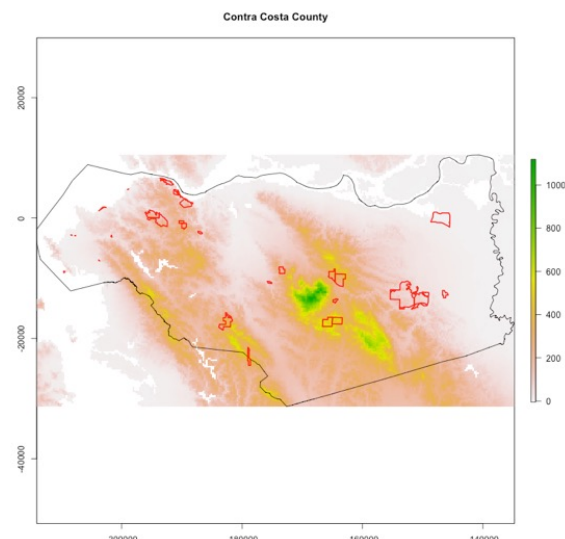
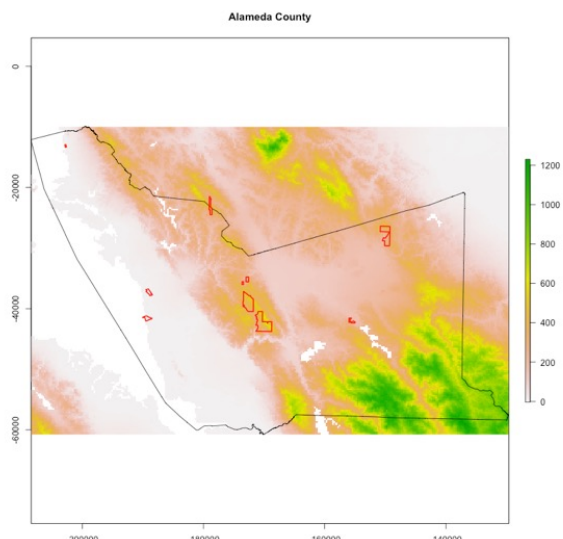


Land acquisition and ecosystem carbon in coastal California Technical Appendices

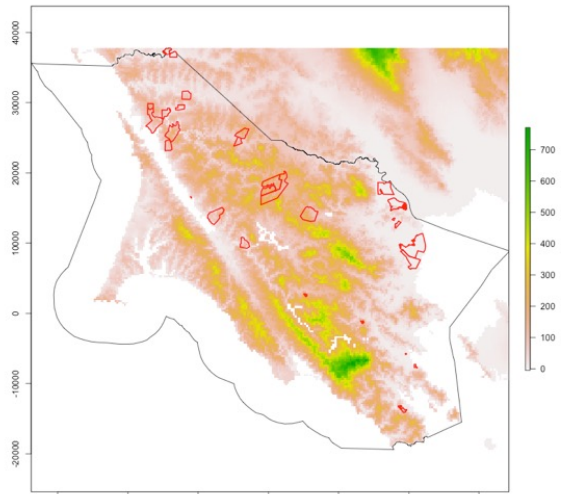
Tables A1.1 through A1.3 provided in accompanying Excel file

Fig. A1. Acquisition maps for individual counties

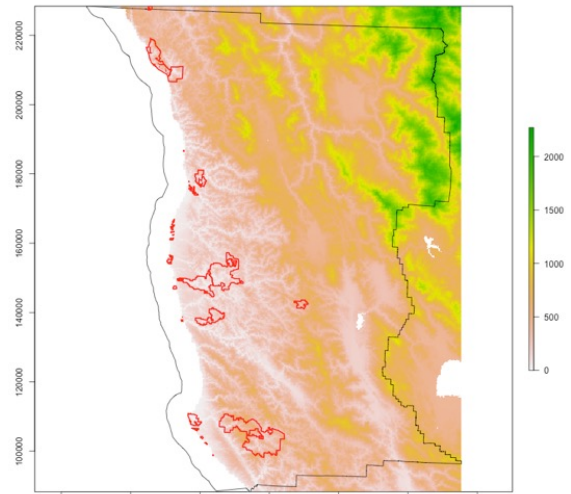
Fig. A2. California climate maps and SCC legislative area.



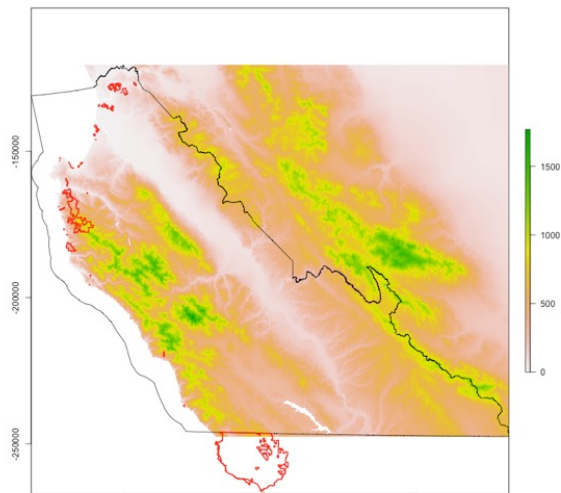
Marin County



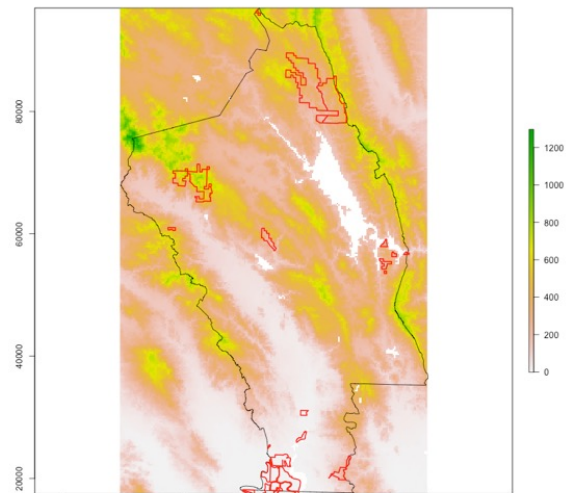
Mendocino County



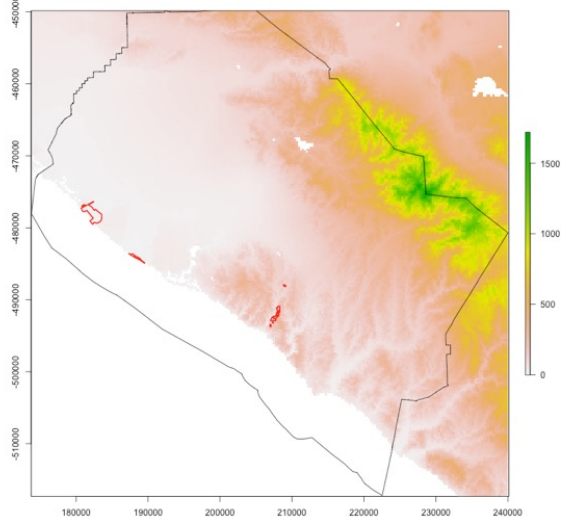
Monterey County



Napa County



Orange County



San Diego County

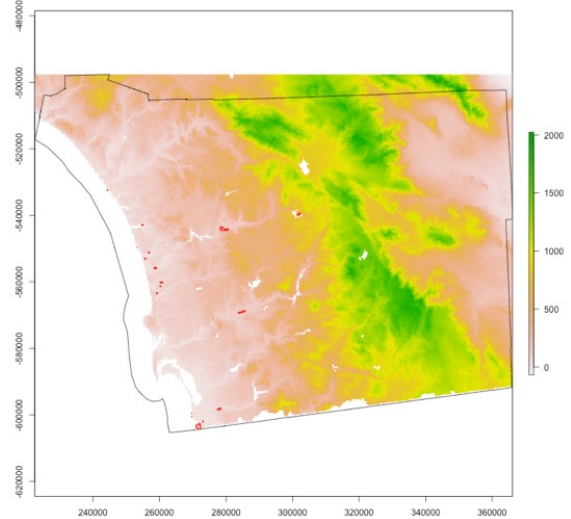


Figure 1.2

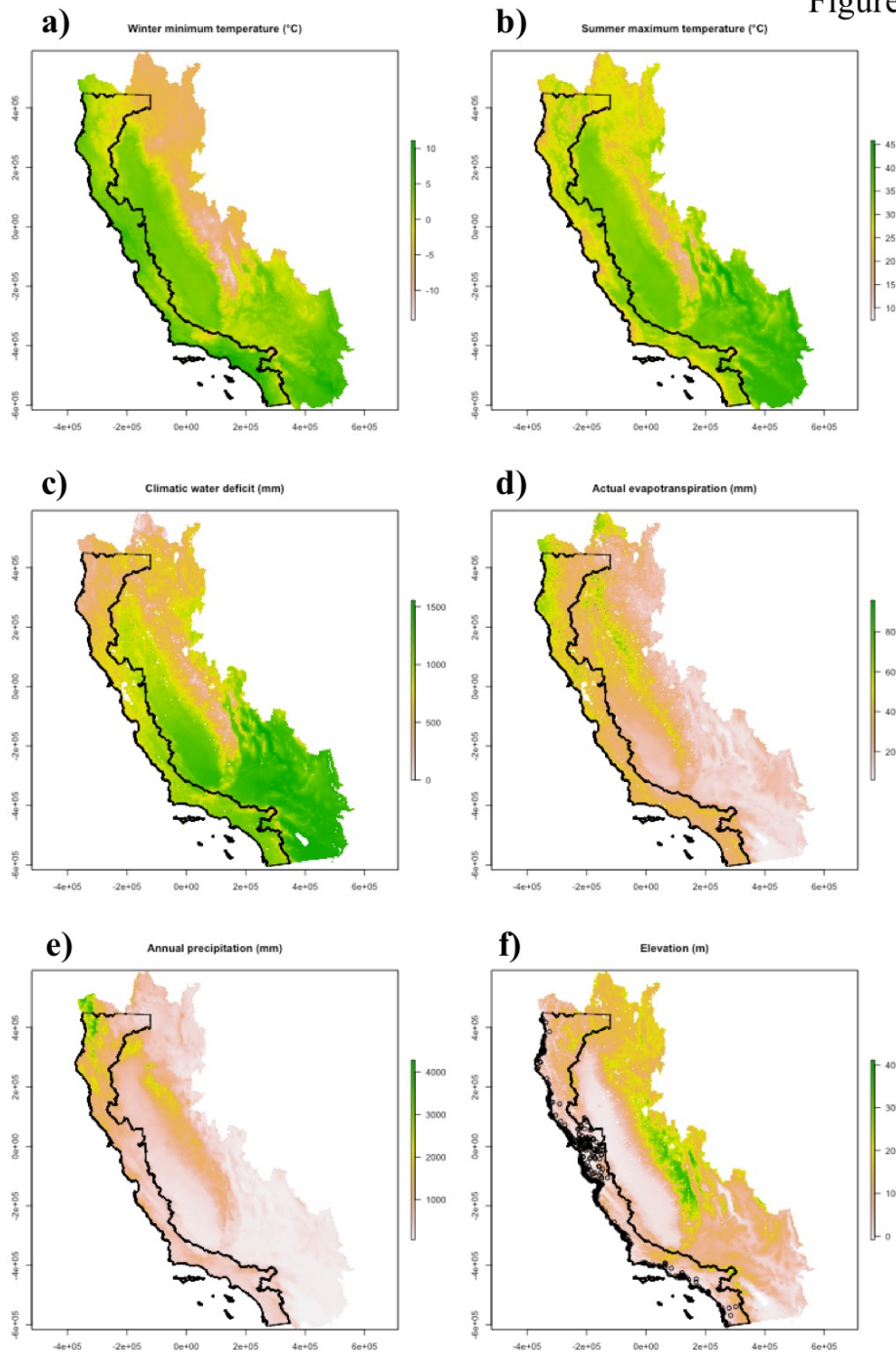


Fig. A1.2. California climate maps (spatial domain is 'hydrologic' California used for Basin Characterization Model). a) winter minimum temperature (Dec-Feb, °C); b) summer maximum temperature (Jun-Aug, °C); c) climatic water deficit (CWD, annual, mm); d) actual evapotranspiration (AET, annual, mm); e) annual precipitation (total, mm); f) elevation (m). On all panels green represents high values.

Appendix 2A. Counterfactual Analysis for Coastal Conservancy Properties

Author: Diana Moanga

Evaluating avoided emissions due to conservation based on modeling counterfactual scenarios of the proposed highest value alternative use of property prior to acquisition.

Methods

Step 1: Determining the amount of development that would take place on each property if it had not been purchased

The first step in creating the counterfactual scenario is determining the “Highest and Best Use” (HBU) of the land in the absence of conservation encumbrances. This information is provided by the appraisal report of each individual property. The term “Highest and Best Use” refers to “the reasonable probable and legal use of vacant land or an improved property that is legally permissible, physically possible, appropriately supported, financially feasible, and the results in the highest value.”

Depending on the location of the subject property (within, or outside the urban limit line), on its topographic characteristics (steepness of the terrain), size, access to essential utilities (such as roads, water, sewer, and electricity), and proximity to nearby urban centers, the HBU scenario differs from property to property. Potential HBU’s include residential development, both development and vineyard production, timber production, and continued open land for recreation, grazing and conservation of species. The zoning regulations for each property are also a key determinant in dictating the amount and density of the potential development occurring on the property. The presence, or potential of obtaining a number of Certificated of Compliance (COC) also determines the amount of development that would take place. A certificate of compliance is a document which, once approved and recorded, indicates that a subject area is an existing legal lot or parcel which may be sold leased or financed separately from other pieces of property without further processing required under the Subdivision Map Act. Within the appraisal reports a COC refers to “the reasonable probable and legal use of vacant land or an improved property that is legally permissible, physically possible, appropriately supported, financially feasible, and the results in the highest value”. The number of potential Administrative Certificate of (subdivision) Compliance parcels (ACC) is also important information found in the appraisal document, since it also provides a description of the potential development that could take place on the land in the absence of conservation. ACC parcels are legal parcels recognized by the county that predate the existing Assessor’s parcels.

Step 2 – Identifying the vegetation conversion trends surrounding each subject property

After determining the acres that would be likely to be converted under the HBU scenario, an analysis of the existing vegetation conversion trends (within a specified 50,000 m buffer area around each property) allowed us to identify the vegetation classes that have been converted to development within the period studied (between 2001 and 2010). Within this context, vegetation conversion trends refers to the amount (calculated in pixels) and type of vegetation that was converted to development, as a percentage of the total area converted within the buffer. The 50,000 m buffer was selected since it was thought to be large enough to capture relevant vegetation trends

within the immediate neighborhood of each property, yet small enough to provide relevant information pertaining to the predominant vegetation types that were transformed to other uses.

Furthermore, in order to be able to calculate the carbon stored through avoided conversions, each Landfire vegetation type was categorized in a biomass class. A total of 1083 unique biomass classes were created by Gonzalez et al. (2015) which represent unique combinations of vegetation type, vegetation height (in meters) and cover (calculated in % cover). Since each vegetation type has an associated unique biomass class, the biomass class was further used as an input in calculating the neighboring conversion trends, and was also the baseline used for designing the counterfactual scenario of each property based on its surrounding conversion trends. It is worth noting that in this case, vegetation type and biomass class can be used interchangeably, however, biomass class is preferred since it represents a more detailed subset of vegetation type in terms of its carbon storage characteristics. Some land cover types had associated 0 carbon storage values, and subsequently, were given 1099 values. These land cover types are primarily represented by development and agriculture. As a result, to be able to effectively separate the two different land uses, the development areas were selected from the 2001 and 2010 Landfire data, and were overlayed with the 2001 and 2010 biomass data. As a result, the biomass pixels with 0 carbon values (coded as 1099 values) that represented development, were identified for both years, and further used in analyzing vegetation conversion trends. Following is a step by step description of the process of identifying land conversion trends within the specified buffer area between 2001 and 2010.

1. A 50,000 m buffer is created around the subject property.
2. The 2001 and 2010 biomass values are extracted within the buffer area, using Extract by Mask function.
3. The 2010 development layer is identified by extracting the 1099 values that overlay with the 2010 Landfire data. The 2010 Landfire data has pixels associated with: high-intensity development, medium-intensity development, low-intensity development, and development – roads.
4. The 2001 Biomass classes that were classified as development in 2010 are identified by extracting the 2001 biomass layer using the 2010 development layer as a mask.
5. Only the vegetation types that have an associated carbon value, all biomass values different from 1099 are selected.
6. The total number of biomass pixels found at the previous step was calculated. This represents the total number of vegetation pixels that were not development in 2001, yet they became development in 2010.
7. The percent of change (calculated as the number of pixels of each biomass type that changed divided by the total pixels that changed within the buffer area) is determined for each biomass type.

The result of the steps previously described deliver a table with each biomass class (identified as unique values) and associated pixel counts for each, as well as the percent of change of each biomass class. Identifying the land conversion trends within the specified buffer helps better inform which vegetation types within the property are more likely to be converted compared to others, under the HBU scenario, and further informs carbon storage estimates.

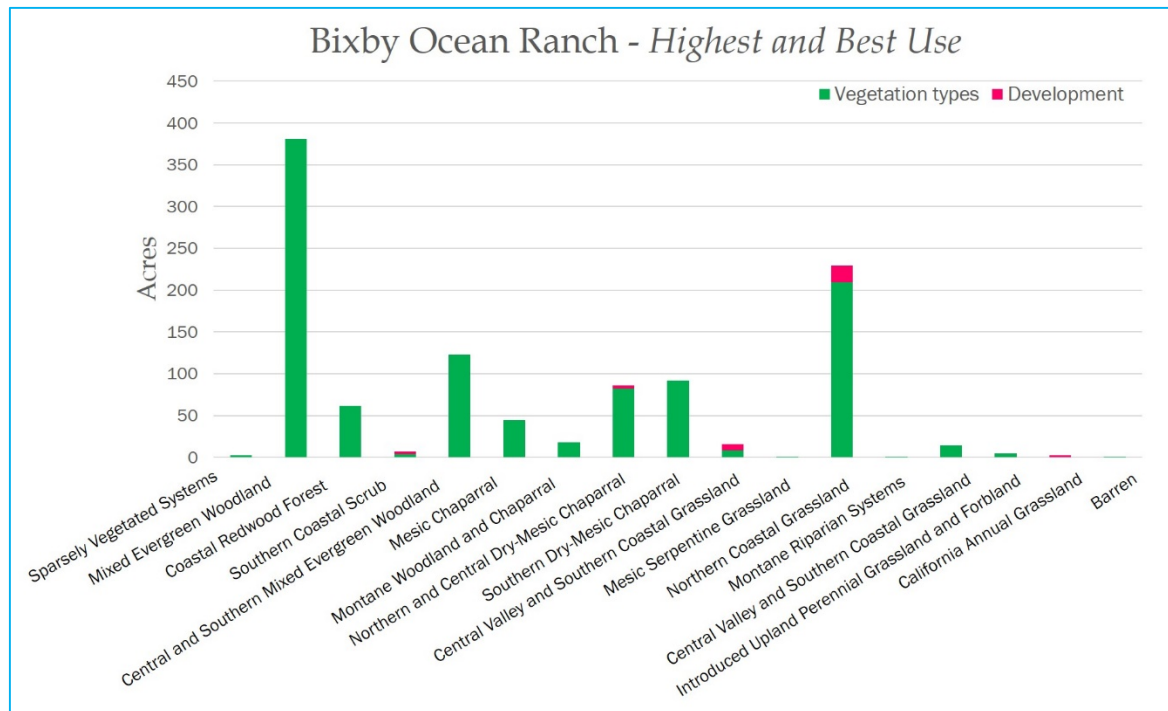
Step 3 – Modifying the Property vegetation at the pixel level

Once identifying the biomass classes and associated land conversion trends, these trends are applied to the subject property by taking into account the number of pixels that need to be converted, as well as the percent associated with each biomass class that was converted in the surrounding area within the 10 year period studied. Since not all biomass classes found within the buffer are also be found within the property, it is necessary to calculate the relative percentages associated with each biomass class. This is done by summing up the total percentages of the biomass classes found within the property and dividing each percentage by this new total. The relative percentages are calculated to provide accurate information on how much each biomass class was converted within the buffer with respect to other classes found in the property.

The land cover for each property is determined by extracting the 2010 biomass layer using the subject property's shapefile as a mask. Then, in order to easily be able to individually manipulate distinct pixels, the raster is then converted to points, where each pixel becomes a point that has the biomass class as an associated attribute. An algorithm was developed in arcPy that converts each biomass class within the subject property, based on the percent of change associated with each biomass class, until the total pixels that need to be converted is reached. As an example, if it has been determined that the vegetation type Southern California Dry-Mesic Chaparral, associated with biomass class 36, has a relative percent of change of 25%, and the total number of pixels that need to be converted to development is 1000, then 250 Southern California Dry-Mesic Chaparral pixels will be converted to development (given a value of 9999). If the number of Southern California Dry-Mesic Chaparral pixels within the property is less than 250, then all of them are converted, and the remaining number of pixels is considered "spillover" and is added to the number of pixels of the next biomass class that will be calculated. In the case that all biomass classes within the property are converted to development, and the total number of pixels that should be converted under the HBU scenario is not yet exhausted, then the remaining pixels are converted randomly within the property. Few cases of this situation occurred.

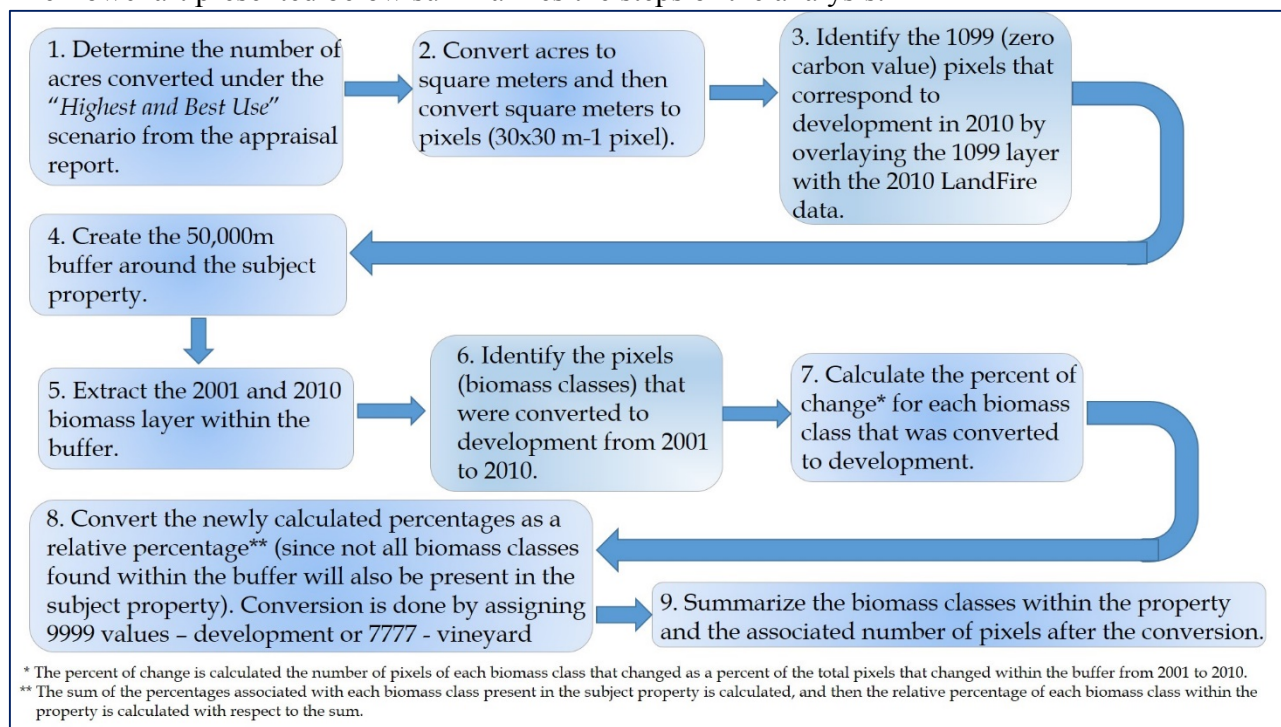
A similar algorithm is used when determining conversion to vineyards. In this case, instead of using the 1099 values associated with development, we use the 1099 values associated with agriculture, and the conversion trends are calculated using similar steps as the ones used for converting to development. The pixels that were converted to vineyards were given a value of 7777.

The result of the newly developed algorithm creates a table with the new pixel counts of the biomass classes (vegetation types) after the conversion to development and/or to vineyards took place. Since the algorithm is not spatially explicit, (meaning that it does not determine the exact location where the conversion takes place), rather it determines the amount of conversion and the land cover types that become converted within the property (based on the observed trends in the surrounding area), the result of the analysis can be effectively visualized as histograms with pixels counts of vegetation types and development (figure below – Bixby Ocean Ranch property used as an example).



The pixel counts associated with each biomass class within each property is further incorporated into a carbon model to determine the total amount of avoided emissions resulted from purchasing the lands for conservation purposes.

The flowchart presented below summarizes the steps of the analysis:



Note - There are a number of properties that have the Highest and Best Use as sustained commercial timber production. An assessment for these properties has not yet been created, since very little information was provided in the appraisal report. Potentially timber management has changed on these properties since they have been acquired by the Coastal Conservancy, and we have not yet calculated how these changes have impacted vegetation

Appendix 2B. Selected Coastal Conservancy properties – summary of Highest and Best Use information from appraisals

Author: Diana Moanga

Color code

- **pink** – Properties were not analyzed
- **red** – Important information from the report, as well as important information about the subject property
- **blue** - Explanation of how we calculated the total number of acres converted

1. Meins landing – **highest and best use – duck hunting club**

2. Hearst Ranch (824 acres were developed – **650 logging units**)

The Subject Property is commonly known as Hearst Ranch, San Simeon, located in the northwest corner of San Luis Obispo County. The Ranch occupies about 128 square miles or roughly four percent (4%) of the County's total land area (3,326 square miles). The Ranch contains approximately 81,774 gross acres and is a working cattle ranch with multiple, diverse and abundant coastal, scenic, environmental, historic, recreational and agricultural resources, along with about eighteen (18) miles of coastline within the Hearst ownership boundaries aligning Highway 1, all of which provide for significant development and/or conservation opportunities. About 48,000 acres is actively grazed by cattle, of which 34,000 acres are defined as prime grazing land.

In the Before Condition (Volume I), the appraiser concludes to a highest and best use as Ranch Preservation Community ("RPC"), which is a shared-amenity ranch where individual housing sites (divided fee interests in homesteads) benefit from common/shared access and use privileges to an assortment of community amenities available throughout the larger ranch. At Hearst Ranch, those amenities include, tremendous open space, twenty-three (23) curvilinear miles of private beaches and coves, bluff-top and backcountry trails, airstrip, agricultural and ranch facilities and improvements, and professionally managed cattle operations, hunting and fishing opportunities. The subject property's general development potential, in the Before Condition, stated as a base threshold, is for **271 legal lots per in-hand Certificates of Compliance, while recognizing a potential for up to 412 primary residential rights and up to 650 lodging unit rights** (plus potential for additional units on Ragged Point).

The appraiser opines that lodging, recreational and commercial development will also be appropriate as the destination, visitor-serving element of this larger Hearst Ranch holding. The appraiser concludes to a reasonable probability of subdividing portions of the Ranch, all consistent with a well-reasoned analysis of highest and best use, in order to create additional legal lots. A reconfiguration of existing parcels through a lot line adjustment process will assist in maximizing the value of amenities of individual parcels and the entire property.

In the After Condition (Volume III), the appraiser concludes to a highest and best use which first assumes the overlay of the new, collective Conservation Easements⁴ that significantly change (reduce) the legally permitted uses of the Ranch. The subject property's general development potential transitions in the After Condition, wherein the 271 Certificates of Compliance become subordinate to 33 legal lots, the potential for 412 primary residential rights are retired for 27 primary residential rights, and up to 650 lodging unit rights (plus potential for additional units on

Ragged Point) are retired in favor of 100 lodging units. The Conservation Easements allow for a continuation of the commercial agricultural operations and a subdivision of four large parcel ranches. The four large ranches are included within the 33-lot count. Terms and conditions within the Conservation Easement require access and trail rights on the west side and impose restrictions and limitations on uses, which collectively burden the property and seek to preserve the property's substantial resources and existing character.

3. Mill Creek Ranch (0 acres developed)

The subject property has 24,772 acres. Zoning – TPZ. Timber is approximately 5000 acres of conifer old growth, young growth of various ages over 45 years, and scattered residual seed trees. The majority of the property (over 19,000 acres) is composed of cutover lands. Most of this area is very well reforested with age classes varying from 0 to 40 years of age. Much of the area can be tractor logged or long lined. However due to the steep terrain, layout of the road system, and sensitivity of the area, cable (running skyline) logging is most appropriate. Highest and best use can be defined as the most profitable and likely use to which a property can be put or adapted in the reasonably foreseeable future, for which there is a market. Not all forested properties have a highest and best use as long-term timber production. Following logging, some forestlands are offered for sale as recreational properties in order to generate a higher return. After considering the suitability of the subject property for alternative uses, we conclude that the **highest and best use of the subject is sustained commercial timber production.**

4. Garcia River (full appraisal not available.... only 2 page scanned document of highest and best use section) – The highest and best use of the subject property is a speculative timberland investment.

5. Preservation Ranch (308 acres were developed and 190 acres were converted to vineyard)

The property has 19,645 acres. Zoning – Predominantly TP – timber production district 160-acre minimum parcel size. About 19% of the subject is zoned RRD (resources and rural development district). The subject's topography varies from being moderate in the grassland and vineyard areas to very steep in the timberland areas. There are **154 COC** - Certificates of Compliance (parcels with Certificates of Compliance are considered legally saleable). Agricultural uses, including vineyard development are also physically possible along several of the open ridge tops of the Ranch. **There are approximately 190 acres of grassland that could be considered potentially converted to vineyard without requiring a timberland conversion permit.**

6. The Big River and Big Salmon creek acquisitions (106 acres were developed on Big River and 54 acres in salmon Creek – a total of 160 acres were developed)

Big River Property - 11,707 acres. Current use timber production. Zoning TPZ- timber production zoning – additional agricultural and limited commercial uses are allowed with a conditional use permit. The Big River property is zoned for 160 acre density and has potential for up to **73 parcels under the current zoning. Highest and best use.** The highest and best use of a property is the single use that is legally permissible, physically possible, appropriately supported, financially feasible, and maximally productive. The TPZ district allows low-density residential development – based on a 160 acre density over the subject property. Highest and best use of the

subject property is for continued timber production with complimentary subdivision development of up to 73 rural residential homesite properties.

Salmon Creek property- Zoning TPZ. Zoned for 160 acre density and has the potential for up to 27 parcels under current zoning. Highest and best use- Continued timber production and subdivision development of up to **27 residential homesite properties**.

7. Lauff's Ranch (3500 acres of vineyard)

Property has 12,155 acres. 31 parcels. Current use cattle grazing. **Highest and best use.** Continued use for recreation, cattle grazing and potential for long term vineyard development. An old report estimated **3500 acres of vineyard** (less than 30 %slope) but 20 acres and 50 - 60 acres have vineyard potential.

8. Palo Corona Ranch (50 acres were developed)

Total property size 9866 acres. The historical use of the ranch has been for livestock grazing, recreational and wildlife habitat. The three sections (Front Ranch, Middle Ranch and South Ranch) have a development potential that enhances the value of each section to a higher values as compared to a single ranch. The highest and best use for the Front Ranch is an estate ranch that has added versatility and value due to the existence of four lots or record. The maximum development potential of the Middle Ranch is 21 parcels. South Ranch (38 lots) – highest and best use is that of an estate recreational ranch with a future and speculative potential for development.

9. Cemex Redwoods Conservation easement (printed report) (214 acres were developed)

The property has 26 parcels, 8158 acres. **Highest and best use:** Timber harvesting and residential use with one single family dwelling per parcel (13 legal parcels- a minimum of a total of 13 individual mountain residential parcels might be anticipated). **93 residential lots** could be subdivided from the main block. This is further subdivided into **69 minimum 40-acre lots within the coastal and watershed lands** and another **24 minimum 10 acre lots within the other lands** to compute to the 93 lo-total. Based on the minimum parcels sizes of **160 net developable acres** within the coastal zone and **40 net developable acres outside of the zone**, the Cemex main block lands could potentially be divided to create **107 parcels suited for rural development. 2767 acres** of coastal and watershed land under 30% slope and **243 acres** of other lands under 30% slope. (**107 *2=214 acres of developed land.**)

10. Big River (no full appraisal available only 2 page scanned summary of the highest and best use section)

The subject property has 7319 acres. Zoning TPZ. **Highest and best use:** sustained commercial timber production.

11. Jenner Headlands (84 acres were developed)

Development or sale of seven existing legal coastal lots, future estate residential lots through lot line adjustment and/or subdivision of most of the remaining ACCs. Current use: rural agricultural grazing, timber production. Zoning: RRD B6 160. **42 approved Certificates of Compliance.** (Assuming that each COC is approximately 2 acres, we need to convert 84 acres)

12. MSCP – Monte Vista Ranch (NO APPRAISAL REPORT AND NO GIS LAYER)

13. Rancho Corral de Tierra (68 acres were developed)

The subject property consists of approximately 4,262 acres of land. **The highest and best use of the subject is considered to be the future development of 34 potential rural residential building sites** averaging in size at approximately 125 acres, although the most likely scenario would be some type of clustering concept at the lower elevations near Highway 1.

14. Blue Creek (very detailed appraisal reports for each parcel within the property - 0 acres were developed)

Zoning: Predominantly TPZ, Timber Production Zone with minor areas of AE Agricultural Exclusive. There are 4 THP's which were still open in 2011 due to stocking obligations. The property includes a total of 242,357 MBF of timber including 74,836 MBF of redwood and 144,884 MBF of which 15,862 MBF is redwood and 43,060 MBF is Douglas fir. **Highest and Best Use: Commercial timberland.**

15. Willow Creek Property (30 acres developed)

Size 3,373 acres. Zoning Mixed TP-CC-B6-160/640. TP-B6-160. Present use timber production grazing and recreating. **Highest and best use.** Rural residential development, timber production, commercial vineyard development and recreation. A mix of uses including rural residential development, timber harvesting and recreational pursuits. The presence of **seven ACC entitlements** a good interior road system, manageable terrain the public road frontages, water, electricity, and telephone availability all support rural residential development of the subject. **Although it is not possible to determine the exact number of buildable lots obtained from the subject at this time, it is reasonable to assume that eight parcels could be obtained via zoning and that seven exists by ACCs.** Land use and zoning designations. 160 acre designation 751 acres. 160/640 ac designation 2622 acres. This yield the following number of potential lots via zoning. $751/160 \text{ acres} = 4.69 = 4 \text{ lots}$. $2,622/640 = 4.10 = 4 \text{ lots}$ for a total potential via zoning of 8 lots. A certificate of compliance is a document which once approved and recorded indicates that a subject area is an existing legal lot or parcel which may be sold leased or financed separately from other pieces of property without further processing required under the Subdivision Map Act

16. Cowell Ranch (1277 acres were developed)

The property consist of 21 contiguous parcels of land containing 4444.5 gross acres. Actual 3942 acres. Zoning: A-4 Agricultural preserve district. Proposed development: the Cowell Ranch will not only provide a wide range of housing choices, but will also provide a business park, office and commercial uses, civic uses, open space, schools and recreation. Two villages are proposed and within each village, commercial and civic uses are clustered around the village green. The project will build two elementary schools and provide one middle school site, a possible high school site and a community college site. The business park and the office and commercial sites in the two villages will support over 6600 jobs. Proposed **76 acre Business Park. Over 3000 acres of the total 4277 acre Cowell Ranch project will be preserved as permanent open space.** **Highest and best use:** as improved is interim agriculture compatible use with long term development of the land along Walnut Avenue and around SR-4/Vasco Road interchange, the spin-off of rural ranchettes on the more remote areas of the property could also provide interim income as well. Highest and best use as vacant is to hold for future development.

17. Driscoll Ranch (NO GIS LAYER - no full appraisal available, just appraisal review - 186 acres were developed)

Property has 3680 acres. Zoning: RM and RM-CZ: Resource Management District, with portion in Coastal Zone. **Highest and best use:** Residential subdivision development. The subject property consists of ten contiguous parcels of land totaling 3,680.7 acres. It contains steep terrain ranging in elevation from about 300 feet along its southern boundary to 1,300 feet in its northern and central portions. The property is currently used for ranching. The southwestern portion of the property was used for oil extraction from the late 1950s to the early 1990s. The subject property had been part of a greater 3,986.17-acre ranch before its purchase by the Peninsula Open Space Trust (POST). The property's development potential, as allowed by its zoning, may be calculated using a somewhat complicated density credit formula. About one-third of the property is in the Coastal Zone, where the minimum parcel size is 40 acres. For the remainder of the property, the minimum parcel size is five acres. Other conditions, including degrees of slope and distance from all-weather roads, would further restrict the allowed development. The San Mateo County Department of Environmental Management prepared a density analysis study that indicated there were 104 density credits available on the greater 3,986-acre Driscoll Ranch; a subsequent POST analysis indicated 93 of the credits would apply to the subject 3,681 acres. The appraisers note: "[T]his density credit analysis does not guarantee that San Mateo County would **approve 93 homesites on the Driscoll Ranch.**

18. Howe Creek Ranch (0 acres)

Property has 3640 acres. Zoning TPZ, AE agricultural exclusive – 20 acre minimum; unclassified. Current use grazing, residential. **Highest and best use.** Continued grazing, heavy section logging, rock extraction sale of individual parcels. The signature into law of Senate bill 497 which tightens land division practices in California.

19. Wildlake Ranch (220 acres were converted to vineyard, 39 acres were converted to development)

The 3,044± acre Wildlake Ranch is located on Rattlesnake Ridge, in the hills east of Napa Valley near Angwin, and stretches nearly four miles north to south and just over two miles east to west at its widest point. It contains steep peaks, which rise to about 2,900 feet, and many ravines, gorges, and canyons. Slopes on the great majority of the ranch exceed 30%. **The ranch contains 25 assessor's parcels and, by the appraisers' calculation, 18 legal parcels. Highest and Best Use: Continued use as agricultural land suitable for development to premium wine grape vineyards with potential rural residential sites, and native hillside land.** By examining maps of slope analysis, the appraisers determined that the ranch may contain as many as 275 acres of less than 30% slope in contiguous areas of five acres or more; such land has potential for vineyard development. Some of the 275 acres, however, is in narrow draws that could not be developed. The appraisers wrote: "Conversations with parties familiar with the property indicate that somewhere between 200 and 250 acres could realistically be developed." A November 2005 soil analysis by Crop Care Associates reportedly indicated that eight sites on the ranch would be suitable for vineyards. Some of these areas might require a timber harvest permit for their development. Based on the slope and soil analyses, **the appraisers estimated that the ranch contains 220 acres of potentially plantable land.**

In their analysis of the ranch's highest and best use, the appraisers wrote that the ranch's 25 assessor's parcels have not been verified with Napa County. The ranch's zoning allows 160-acre minimum parcel sizes, or a maximum of 19 parcels from the total acreage of the ranch. Because two of the assessor's parcels (40 acres each) are inaccessible, the appraisers assumed that the ranch could likely achieve **18 legally buildable parcels**. Physical limitations, including water availability, steep topography, and the poor condition of existing roads, would make vineyard or residential development of the property challenging and expensive, but would not preclude such development. The appraisers concluded: "**The highest and best use of the subject property, as if vacant, is agricultural land suitable for development to premium varietal wine grape vineyards with potential rural residential sites and native hillside land.**" (220 acres of vineyard and 18 legally buildable parcels – we assume the each has 2 acres, for a total land that would be developed $220+36=256$ acres total converted)

20. Ahmanson Ranch (scanned pages with highest and best use – no full appraisal – limited information in the scanned pages)

The property has 2,958,76 acres. The most reasonably probable legal use of the subject property is a **master-planned community with multiple residential subdivisions and supporting commercial and public land uses**. The analysis thus far has indicated that a large-scale residential development would be most likely. As if vacant, the highest and best use for the subject property is for immediate development. An alternative use of the subject property is for use as permanent open space.

21. Gaviota Coast - El Capital Ranch Acquisition – 2476 acres (14 acres developed)

Property has 2858 acres. The majority of property is zone U – unclassified replaced with Agricultural designation AG-II. **Highest and best use** - The property is suitable either for use as **a single large ranch or it could be subdivided into a small number 5-7 parcels each as a large estate parcel**. Zoning allows for parcels as small as 100 acres (25+- parcels) but this is very unlikely given the site characteristics. Divided into 500 acres parcels or seven 350 acre parcels each would also qualify as a large ownership.

22. Wild Cherry Canyon (NO APPRAISAL REPORT AND NO GIS LAYER EITHER)

23. Otay River-Honey Springs (NO APPRAISAL REPORT AND NO GIS LAYER)

24. Morro Bay-Maino Ranch (no appraisal report)

25. Coyote Ranch (0 acres were developed)

The highest and best use of the subject property as vacant is for use as Endangered Species and Habitat Protection/Mitigation land with limited speculative rural residential subdivision potential. The most logical buyers would be either a public or private entity pursuing a proposed project that required endangered species permits.

Assuming that the property's subdivision potential could be achieved, subdivision to the greatest number of total lots possible would unquestionably result in the highest or maximally productive use. The property's proximity to the major population and employment centers of Silicon Valley provides a deep and wide pool of effective buying demand for conveniently located rural residential estates and speculative/recreational properties. Further, clustering would still

preserve at least 90% of the land in open space, affording the habitat protection/mitigation potential to the vast majority of the land area. However, actual subdivision potential carries significant uncertainties and risks. Further, the pursuit of a subdivision of any scale could be expected to face vocal opposition and involve an extended timeframe, substantial development efforts and a significant capital investment. **In view of these considerations, use of the subject property exclusively for the pursuit of a rural subdivision would not be expected to result in the highest net return to the land.**

26. Stornetta Brothers Coastal Ranch (8 acres were developed)

Property has 1763.55 acres. **Highest and best use.** Maximum productivity for coastal properties of this type is largely based on the number of homesites available. A moderate division of the property into **four residential ranches** plus a larger remainder agricultural use could be accomplished by application of minor subdivisions. Zoning is 60 acre minimum lot size. Parcel 1 – it would contain approximately 127 acres on the north side of the former Coast Guard reservation. A likely homesite building envelope would take advantage of the view of the rocky coastline and Sea Lion Rock. Parcel 2 292 acres upland bluff ocean frontage. Parcel 3 522 upland Bluff ocean view. Parcel 4 inland meadow ocean view. Parcel 5 Balance of SBCR

27. Tolay Ranch (56 acres were developed)

Present use: a variety of agricultural pursuits, including cattle grazing, farming and vineyard use. The property provides the primary residences for members of the Cardoza family. **Highest and best use** would be the subdivision for development of up to as many as **28 residential homesite** properties with **vineyard potential**. 1. M&R Cardoza holding (317 acres): is division and development into 5 homesite lots through a combination of the ACC lots and a minor subdivision. 1. For the Cardoza Family (1420) holding the highest and best use is the realignment of the existing ACC lots into thirteen separate rural homesite tracts, each with some vineyard development potential and most with further split potential through the current zoning.

28. Bolsa Point Ranches (92 acres were developed)

Highest and Best Use: Development and sale of the subject property's individual parcels, primarily for residential uses. According to the appraisers, the Bolsa Point Ranches consist of four individually identified properties: 1. Peninsula Farms—A 141.6-acre property located south of Pescadero Marsh and east of Highway 1. The property contains 13 AP's, of which **nine are buildable** with a mean parcel area of 14.87 acres. 2. Bean Hollow Ranch—A 1,452.6-acre property east of Highway 1 and west of Cloverdale Coastal Ranch. The property contains 29 AP's, of which **27 are buildable** with a mean parcel area of 53.77 acres. Parcel 6, containing 41.60 acres, was to be retained by the seller, for a net area to be sold to POST of 1,411.00 acres. 3. Bolsa Point Ranch—**A single** 78.9-acre parcel located west of Highway 1 north of the Pigeon Point Lighthouse. 4. Lighthouse Ranch—An 87.8-acre property containing eight AP's of which **five are buildable**. The property is located on both sides of Highway 1 and has about one mile of beachfront north of the Pigeon Point Lighthouse. **($9*2+27*2+1*2+1*2+8*2 = 92$ acres of residential development.)**

29. North Point Joint Venture (44 acres developed, 500 acres of vineyard)

The subject property is zoned within the Land Extensive Agriculture district which provides for a variety of agricultural uses. The LEA district also allows for low-density residential development with 60-acre density over the Northern Section and 100 acre density of the Middle and Southern sections. The zoning appears to be the only apparent legal restriction on the property and would allow a maximum development of up to 22 (4 units Northern Section and 8 Southern section) homesite parcels. The whole property could potentially be split into as many as 22 lots through a major subdivision per zoning. A likely scenario would be to subdivide the Northern Section into as many as eight to then lots (range of 100 acres to 80 acres sites) with the Middle Section accommodating a three to four lot subdivision.

Rural residential development with a vineyard component would be physically possible in the Northern and middle Sections of the subject property. 500 acres have soil and topography that may be suited for grape production. (22*2ace homesites= 44 acres developed. 500 acres vineyard. Vineyard acres will be placed on grasslands since they will be easiest to convert)

30. Roche Property (printed report) (385 acres were converted to vineyard, 28 acres were converted to development)

Property has an area 1657.19 acres. Current use cattle grazing agricultural uses . Zoning: land extensive agriculture second unit exclusion combining district, scenic resources combining district, Valley Oak habitat combining district, geologic hazard area combining district. The property has 14 administrative certificates of compliance (ACC). Highest and best use: Agricultural uses with the potential for vineyard development and residential development ancillary to the agricultural uses permitted by zoning. 450 acres of plantable vineyard but 15% of the area will have drainages and landslips which should not be planted. Therefore, 385 gross acres are estimated as vineyard plantable at site (301 acres total in Sonoma Coast appellation, 15 acres in Carneros appellation). The property is defined as 14 legal parcels by Administrative Certificates of Compliance (ACC). The subject property could only be developed with agricultural uses, such as vineyards or grazing, with residential development ancillary to the agricultural use, per the Williamson act. The property could be developed with as many as 14 residential units one each per legal ACC and sold separately. (385 acres of vineyard and 14 ACC each of approximately 2 aces for a total of 28 acres of development. Total land use change 385+28=413 acres)

31. Bel Marin Keys (405 acres were developed)

Property has 1620.3 acres. Number of planned developed unit 796. Master planned residential community with an 18-hole golf course, deep water lagoon, yacht club, swim and tennis club, ad community center. The undeveloped land of about 994 acres will be retained as bay and fresh water marsh open space. There are also 16.6 acres that are unplanned and are assumed to remain in their present condition. Land use breakdown: 588 single family lots – 116.2 acres; 208 cluster housing – 24.3; Community facilities 5.6; Golf course – 259; Lagoon 205; Bay marsh 783.9; Fresh water marsh 209.7; Unplanned 16.6; Present use 0 dry-farmed for oat hay with about 200 acres in active cultivation. Development 515 lots of 5100 square feet per lot; 113 lots of 6120 square feet per lot; 60 lots of 7140 square feet per lot. The density of 8.56 units per acre with an average lot size of about 400 square feet. The highest and best use of the subject property as vacant is the proposed residential development of 796 units. (60+16+10 -> 86 acres were developed under the development section of the appraisal)

32. Santa Clara River Parkway (0 acres were developed)

Highest and Best Use: Open space. All of the subject's acreage is contained within the Santa Clara Riverbed and is considered open space. It has historically been utilized for flood control and some limited recreation. Zoning: The subject is zoned OS-80 (Open Space-80 Acre Minimums) by the County of Ventura and is a legal conforming parcel. Based on the subject's physical characteristics, zoning restrictions and economic considerations, it is the appraiser's opinion that the current Highest and Best Use for the subject, both "As Improved" and "As If Vacant", is its current use for open space.

33. Ventura River – Farmont Ranch (no full appraisal available, just appraisal review – 26 acres developed)

The subject property has 1,577.39 acres total. The appraisal valued 1,417.39 acres in fee and a conservation easement for 160 acres, excluding two five-acre building envelopes. **Highest and best use:** residential subdivisions. According to the appraiser, the subject property had been part of a larger holding known as the Rancho Matilija, part of which was developed in 1980 into an exclusive gated residential tract featuring 2+ acre estate sites. The subject has long been used for agriculture, including production of oranges on 40 acres and livestock grazing. Because of the orchard's advanced age and poor prices for fruit, the appraiser did not consider the orchard to contribute significantly to the subject's value. The subject's topography ranges from gently sloping to steep, with a portion consisting of river bottomland that has been fallow. After considering restrictions imposed by zoning and other regulations, and conferring with county staff, the appraiser determined that **the subject property's highest and best use was residential, with division of the subject into 10 parcels** in accordance with a design prepared by Jensen Design & Survey, Inc. In the design, **seven** 80+ acre south-facing lots are located along the Los Robles Casitas Diversion Canal. **The three** additional lots are located on the west side of the canal in the northerly portion of the property. Two of these lots are 80+ acres, and the third is 200 acres including the existing orange grove and the primary river channel and floodplain of the Ventura River. Two of the 80+ acre lots are not proposed for sale in fee. For these **two lots**, conservation easements would be purchased that would restrict uses and development on all but a **five-acre building site on each lot.** (8 lots * 2 acres + 2 lots * 5 acres)

34. Valley View Ranch (NO APPRAISAL REPORT AND NO GIS LAYER)

35. Rockville Trails Estate Ranches (386 acres were developed)

Highest and Best Use: Rural residential development in a manner consistent with the physical characteristics of the property, inclusive of either individually developed wells on each lot or a feasible community water system, the use of a septic leachfield system on each lot for wastewater disposal, and in accordance with all conditions of approval from the appropriate permitting agencies, as well as development restrictions recorded on the subject property in June of 2011.

Zoning: The 1,574.7-acre property owned by White Wing Highland Associates, of which Parcels 2 and 3 are part, was rezoned, and the existing General Plan amended, by the County of Solano as a part of the October 14, 2008 project approval by the Board of Supervisors. Ordinance No. 2008-1 696 rezoned the property from A-20, Exclusive Agricultural and PUD, Planned Unit Development to Rural Residential (R-R) District with a 2.5-acre minimum lot size, Exclusive Agricultural (A) District with a 20 acre minimum lot size, and a Policy Plan Overlay that allows lots as small as one acre in size. The current Solano County zoning designations and General Plan

Land Use chapter legally allow for a maximum of 2.5 units per acre on all but a small portion of Parcel 2, where the zoning is A-20, permitting one lot per 20,000 square feet.

It is reasonable to conclude from the foregoing discussion that development costs for the **370-lot subdivision** project as proposed will be significantly higher than for those typically experienced in conventional residential subdivision development construction. The appraiser concludes that it is not reasonable to consider the current development proposal as financially feasible as of the date of valuation. Giving consideration to the foregoing analysis, the appraiser has concluded that **the highest and best use for both the 864.7± Acre Portion of Parcel 2 and Parcel 3 is for the future development of single family residential estate lots at a very low density.**

Although the property appraised consists only of a 1,164.7± acre portion of the 1,574.7-acre Rockville Trails Estates subdivision, it is important to understand the context of current project approvals as they have a bearing on the highest and best use of the property appraised. The project includes development of a **370-unit single-family subdivision** on the project site. The western **1,220± acre Rural Residential Area of the project site would be divided into 354 single-family lots with a one-acre minimum lot size** and additional open space parcels. The lots would be clustered in neighborhood pods along and near the primary looped roadway that is proposed as part of the project. In addition, a total of **16 lots would be developed** in the eastern Agriculture Area with a **minimum lot size of 20 acres**. Each lot would be developed with one single-family house. (354* 1 acre parcels, 16*2acre parcels= 386 acres of development.)

36. Tuna Canyon (no full appraisal available just appraisal review – 0 acres developed)

Property has 416 acres. Zoning: A1-1, Agricultural, within the Coastal Zone, in Flood Zone C—moderate or minimal hazard. **Highest and best use:** Permanent public open space, with secondary suitability for low-density residential estates. The subject property is part of the Santa Monica Mountains Significant Ecological Area, designated by federal and State government resource agencies for protection as open space with ultimate inclusion in the public domain. Because of the property's environmental sensitivity, the appraisers state: "[I]t is doubtful that any significant developmental proposal would be politically acceptable beyond the low density residential estate classification per existing general plan delineations." The steep topography of most of the property, coupled with its remoteness from infrastructure, would also make development costs very high.

37. King Eastern Sweet Ranch

The subject property contains a total of 3 839.76 acres and due to the location and physical characteristics can be easily separated into 3 distinct areas. **Highest and best use:** **in the future clustered residential development may be possible on portions of the King and Sweet Ranches.** The subject is a large property limited by the development restrictions of the Tri-city and County cooperative plan for agriculture and open space preservation area and are impacted by numerous other issues but many different attributes that could be developed to create value. For Eastern Sweet Ranch (1742 acres) **the highest and best use are continued grazing.** Agricultural uses, with some intermediate to long-term speculative potential of clustered residential and/or rural homesite development.

38. Silacci Ranch (no full appraisal available just appraisal review and 2 scanned pages from full report– 40 acres were developed)

Property has 1338 acres. The ranch has access to public electric and telephone service lines and the size of the property, even if subdivided into **40 acre ranchettes**, would be large enough to accommodate septic/leach field systems. **Highest and best use:** “As vacant”: residential development. “As improved”: pursuit of the subdivision process. The subject property is encumbered by a 10-year Williamson Act contract with the county. The contract, however, allows limited subdivision of the property. Provisions of the draft conservation easement evaluated by the appraisal included, but were not limited to, the following: The “conservation values of the easement” were agricultural productivity, open space created by working landscapes, and the natural value of the ecosystem. **No new dwellings would have been permitted**, although existing dwellings could have been replaced at their current locations and “reasonably” enlarged without further permission of the easement holder, and new buildings or other structures and improvements to be used solely for agricultural purposes could have been built with the advance written permission of the easement holder. **Subdivision of the property, by physical or legal process, would have been prohibited except with the advance written permission of the easement holder.** Development rights, except as specifically reserved in the easement, would have been terminated and extinguished.

39. Pleasanton Ridge Regional Park (Robertson Property) (6 acres were developed)

Subject property has 1367.8 acres. Zoning: A- Agricultural district 100 acre minimum lot size, permitting agricultural and other non-urban uses, and to promote conservation and the protection of existing agricultural uses. **Highest and best use:** rural residential ranch with recreational uses, **three potential legal parcels, limited potential for subdivision.** 5 separate parcels. Parcels 3 (40 acres) and 5 (60 foot right of way) are unmarketable as separate legal lots due to configuration and topographic constraints. Each of the parcels has the potential for residential development, and Parcel B may have some subdivision potential. **3 parcels, it is assumed that each off these potential legal parcels would be granted a COC if the property owner made an application for approval.**

40. Barboni Ranch (28 acres were developed)

Zoning A-60 Agricultural and conservation district 60 acre density. Area 1309.64 acres. Current use- the subject is a rural homesite and the land is used for livestock grazing. 190 acres is farmable and has been used for growing forage crops. **Highest and best use** -Rural residential homesite with livestock grazing. To subdivide the property into the maximum number of lots permitted by zoning and the watershed protection easement and utilize the pasture land for livestock grazing. Based on the zoning and the deed restrictions imposed by the watershed protection easement, the subject ranch has the potential to be subdivided into **fourteen single family residential dwelling units.** This results in one dwelling unit for each 95.55 acres

41. Barboni -second parcel – (24 acres developed)

The Highest and Best Use of the subject Home Ranch property, in it's as is condition is concluded to be for sale and **development of up to twelve rural residential homesite parcels.** The Highest and Best Use of the subject Bassi Ranch property, in it's as is condition is concluded to be for sale and development of up to seven rural residential homesite parcels. As both subject

tracts are within a Williamson Act Agricultural Contract, development of any rural parcels would likely require removal from the contract, which involves a ten-year phase out period.

42. Otay river – Lower Otay Reserve

43. Price Creek Ranch (do not have GIS layer and do not have full appraisal report – 18 acres were developed)

The subject consists of a single block of land that is under a single ownership. **There are nine legal patent parcels that have been issued Certificates of Subdivision Compliance** by the Humboldt County Planning Department. In addition there is a significant amount of commercial timber present with one currently approved timber harvest plan in place on the subject. **The highest and best use** of the subject “as if vacant” is as a large estate property or working ranch. Timber harvesting would take place up to the maximum allowed by the conservation easement and the pastureland would be grazed. The highest and best use of the subject “as improved” is as a large estate property or working ranch. Timber harvesting would take place up to the maximum allowed by the conservation easement.

44. Montgomery Woods (printed report) (22 acres were converted)

Zoning – all of the properties are zoned RL 160 (rangeland with 160 acre minimum lot size) with the exception of Parcel C which is zoned FL 160 (forest land with 160 acre minimum lot size). **Highest and best use: Rural recreational homesites.** The property consists of seven individual rural residential/rangeland parcels. **The property contains 11 certificates of compliance suitable for developing individual rural homesites.** (Given the existing 11 COC we assume that they were developed averaging 2 acres each, for a total development areas of 22 acres).

45. Poff Property (14 acres were developed)

Property has an area 1235.70 acres. Zoning LEA-CC-B6-160.640-SR zoning will not allow for subdivisions. A maximum residential density of one dwelling unit per 160 acres would allow for a maximum of **seven dwelling units**. Present use – grazing leases. **Highest and best use.** An estate residence and up to 6 additional residences on the lot with use of the land for equestrian and/or livestock grazing in accordance with zoning and other land use regulations. Construction of up to 7 residences and establishment of any number of a wide range of agricultural uses and farm-related housing is legally permissible. Construction of a single-family residence is the most profitable use of the subject property.

46. The Bixby Ocean Ranch (18 acres were developed)

Comprising of nine legal parcels 1255 acres. **The subject property is clearly usable for residential and ranching purposes.** **The highest and best use** is the development and sale of the individual parcels. Sale of **nine parcels** for Executive Estate Ranches. Nine parcels totaling 1226 acres and ranging from 40 to 160 acres (average = 136 acres/parcel).

47. Dutchman Slough (0 acres were developed)

The ranch contains 1493.3 acres. (same as the property above – probably is the same property). It is our conclusion that the highest and best use of the Cullinan Ranch is for **use as mitigation land with a secondary use as dry farmland combined with recreation.**

48. Nolan Ranch – (information from appraisal report very limited)

Highest and Best Use: as vacant - **residential, private recreational and agricultural use** (all of which are mutually compatible). As improved - **single estate site with the possibility of long-term subdivision development.** What the above information indicates is that, while the subject may have legal standing to accommodate a multi-lot subdivision, the cost of developing the property to more urban standards would be very expensive. So, while the maximally profitable use of the subject property might be to subdivide it into multiple rural ranchettes in keeping with both the spirit of and legal restrictions generated by the Williamson Act, the reality is that the process is really rather a difficult one to achieve.

Zoning: AR, Agricultural Ranch Land with a Scenic Resource overlay. **Very low-intensity residential, commercial, industrial, and institutional uses may be allowed** if they primarily serve the rural ranch and residents, or are necessary for the enhancement and protection of the natural resources of the area and do not require a substantially higher level of service than presently provided. Single-family uses are permitted under the "AR" zoning designation with certain development criteria. The average land area per dwelling unit is determined by calculating the average slope of the parcel and then using this figure in a slope density equation to derive the minimum average land area per dwelling unit. If the parcel has an average slope of 10 percent or less, the minimum lot size is 20 acres. If the average slope is 50 percent or more, the minimum land area is 160 acres. If the average slope is between 10 to 50 percent, the slope density formula is applied. Slope calculations are based on a Topographic Base Map.

49. MALT- Pozzi Ranch (printed report and online Appraisal review) (36 acres were developed)

Zoning C-APZ-60 coastal agricultural production 60 acre minimum lot size. Property has an area of 1,125.43 acres. Current use- two residences and agricultural outbuildings. **Highest and best use:** Before conservation easement a ranch or **rural residential estate of 393.52 acres with potential for subdivision into a maximum of six lots and a ranch or rural residential estate of 731.91 acres with a potential for subdivision into a maximum of 12 lots.** After Conservation easement: Alternative 1: permanent restriction for use of the property as a single ranch with one primary residence limited to 3500 sq ft and restricted use of 413.30 acres. Alternative 2: permanent restriction for use of the property as a maximum of two ranches each with a primary residence limited to 3500 sq ft. **(total of $18 \times 2 = 36$ acres developed.)**

50. Haire Ranch (0 acres were developed)

The potential saline content of area soils notably limits the effective seasonal crop possibilities, and ground-pumping irrigation water is not feasible due to saline characteristics. Winegrape vineyard development appears not to be feasible as suitable well-water would need to be procured beyond what is available for the property today. Rural-residential, or other agri-related structural uses including recreation, are physically possible, but not probable. In conclusion, the physically possible, appropriately supported and financially feasible uses of the subject property, and consequently its **highest and best use**, are believed to be the following active and passive uses:

- **personal recreational use such as hunting and fishing** when wetlands are returned to the property, with possible interim (if permitted by preservation easement holder) continued dryland agricultural uses, including livestock grazing (until the wetland-related project commences)
- advisory participation by property owner in planning a **wetlands restoration project** encompassing the subject property.

51. Mt Diablo Bertagnolli Ranch (8 acres were developed)

Property has 1080 acres. It is irregular in shape and its elevation ranges between about 800 and 2,700 feet. Good views are available from the ridgelines, which are accessible from a graded fire trail. Electrical and telephone service are available from Curry Canyon Road, water is available from an on-site well, and septic systems have been developed for the property's permanent residence and trailers. The property is currently used for cattle grazing. **Highest and best use:** Agricultural grazing land with ranchette potential. The appraiser noted that the subject is outside of the Contra Costa County urban limit line, and that the county's general plan provides that properties so located cannot obtain general plan amendments that would allow urban land uses. In the appraiser's opinion the property's subdivision potential is speculative, given its Williamson Act contracts, location outside the urban limit line, zoning for agricultural purposes, lack of sewer connections, and several other issues. The current owner has not applied for map approvals for development. The appraiser stated he had numerous discussions with county planning department personnel, who informed him that **the property would likely be limited to a minor subdivision use (four or fewer building sites)**. The appraiser concluded a highest and best use of the property for development into an undetermined number of ranchettes, with the steeper and less accessible portions of the property retained in agricultural use.

52. Mindego Hill (52 acres were developed)

Property has 1047 acres. Zoning: TPZ (timber production) and RM (resource management). **Highest and best use:** short-term use as a private estate with a long-term plan for further subdivision development. The as improved use if **one single family residence for each of the density credits determined to be legally permissible on the subject property (up to 26)**.

53. Ryan Creek / McKay Com frst (NO APPRAISAL REPORT AND NO GIS LAYER)

54. Duff Ranch (20 acres were developed)

Site Area 1,000 acres of 1,120-acre greater property. **Highest and best use:** **Development to recreational and rural residential use.** The subject property contains 1,000 acres of a 1,120-acre greater property located northeast of Calistoga in Napa County. The current owner would retain a 120-acre parcel to be created by a lot-line adjustment that reportedly was being perfected at the time of the appraisal. The greater property contains 11 legal lots, and the subject would contain **10 legal lots** after the lot-line adjustment.

55. Bear Mountain (60 acres were developed)

The property has 118.05 acres gross, 903.42 acres net usable. Highest and Best Use: Development of the approved rural residential subdivision. **The subdivision contains 30 developable rural residential lots** ranging in size from 3.62 acres to about 288.55 acres. The lots include four common area parcels totaling 214.62 acres. The appraiser wrote that there is a strong current demand for buildable rural parcels in the area, and that paired-sales (multiple sales of individual properties) show price increases between 1.8% and 3.3% per month since the original appraisal valuation date. Zoning: RRD (Resources & Rural Development) B6 40-acre density, and AR (Rural Residential) B6 10-acre density, with various overlays.

56. Usal Forest and Shady Dell Properties (628 acres were developed)

The Usal Forest Property, 49,576 acres of rural, mountainous timberland in Mendocino County, near the community of Leggett. The Shady Dell Property, 957 acres of rural land with Ocean rontage at Usal Beach.

The Highest and Best Use of the subject property is concluded to be for continued timber production with rural residential development potential. Potential for 261 patent parcels have been identified on the subject property. The 261 potential patent parcels upon perfection and recording with the County Recorder's Office are then recognized as legal Administrative Certificate of (subdivision) Compliance (ACC) parcels. Theses parcels could potentially be perfected through the ACC process and then sold or developed without any further subdivision. The zoning would allow development of up to a total of **309 rural homesite** parcels through a (or several) major subdivision, which would likely take several years to complete. The fact that the property includes potential for further subdivision enhances the value significantly beyond the value of its current use. The potential parcels could feasibly be marketed as rural homesites sometime before they were actually perfected and recorded. The TPZ district allows low-density residential development with a 160-acre density over the subject property. The zoning is the only apparent legal restriction on the property.

Based on the current zoning, the subject's 49,576-acre Usal Tract has the potential for division up to **309 separate parcels**. The Highest and Best Use of the subject Usal Forest property, in it's as is condition is concluded to be for continued timber management and as a rural property with future development potential.

The 957-acre Shady Dell Tract has the potential for division into **five parcels** under the existing zoning. The Highest and Best Use of the Shady Dell property is also concluded to be for continued timber management and rural residential/recreational development. **(309*2 + 5*2= 628 acres of development.)**

57. Pismo Preserve (47.2 acres were developed)

The highest and best use was concluded to be an estate trophy ranch to pursue home site development for a single estate residential home site or possibly **sale as four estate ranches**. A small portion of the ranch near Mattie Road may be a candidate for further intensive development, however, this would require further approvals and annexation. Zoning: the subject property is mostly RL (Rural Lands), zoning which allows low to very low density residential development. Minimum parcel sized range from 20 to 320 acres depending on factors including proximity to an Urban reserve Line fire hazard response time, access, topography. According to the appraiser, the property may be a candidate for further subdivision. **Pismo Preserve Project: a conceptual layout that was proposed in early 2000. It included a 15.5 acre resort sire, 12 estate home sites, 7.7 acre**

mixed-use development along Mattie Road. The Subject property has 4 COC. (We can assume that the proposed development described by the Pismo Preserve Project actually happened, which resulted in the conversion of $15.5 + (12 \times 2) + 7.7 = 47.2$ acres developed.

58. Grossi Ranch Conservation Easement (29 acres were developed)

Present use: residential homesites and livestock grazing. Zoning A 60 Agricultural and Conservation District 60 acre density. This zoning permits a wide variety of agricultural related uses and its zoning density allows one single family residence for each sixty acres. Therefore based solely on its density, the subject ranch could be developed with 14.5 single family residential dwelling units. The highest and best use of the Grossi Ranch is to subdivide the property into the maximum number of lots permitted by zoning, and utilize the remaining land for livestock grazing. (Assuming that 14.5 single family residential dwelling units occupy 2 acres each, we convert 29 acres)

59. Blair Ranch (10 acres converted to development)

After examining various scenarios, the appraisers determined that the subject's highest and best use was subdivision into five homesites with an average size of about 173 acres. The lower parcel, near Uvas Road, would incorporate the subject's existing structures. A new mile-long paved driveway would provide access to all of the new parcels from Uvas Road. The sites would be on a common spring/well system with individual septic systems and propane gas. The appraisers assumed that sufficient water was available on-site to serve all of the sites.

60. Gaviota Coast - Arroyo Hondo Ranch (14 acres were developed)

The property consists of 782 acres of rural land. The subject property is a contiguous assemblage of four separate Assessor's parcels. Overall the subject property is physically suited to its present use as a private exclusive residential retreat. The ranch is also physically adaptable to minor intensification of agricultural use and to extremely low residential development. The zoning is ag-II-100 and Ag-II-320, these designations indicate, statutory minimum parcel sizes of 200 acres and 320 acres. The property could be divided into a total of 5 to 7 parcels. Highest and best use: continuation of the present use, minor intensification of agricultural use, and residential development into two to seven residential parcels.

61. Gaviota Coast - La Paloma Ranch (14 acres developed)

Total of 745.34 acres – 4 legal parcels. Has 2 single family residences. The northerly 3 parcels are subject to an agricultural preserve contract. Southerly parcel zoned U. Northerly parcel AG-II-100 minimum parcel size of 100 acres. Permit ag and related residential uses. A variety of uses is possible in these agricultural zones either expressly allowed or by a special use permit. 53.3 acres are Hass avocados. Highest and best use - 4 parcels each with appropriate zoning for a home site. Grazing or crop farming also include single-family uses. Avocado or lemon orchards and pasturing on steeper slopes in conjunction with rural residence up to 7 parcels.

62. MALT- Poncia Ranch (25 acres were developed)

The Poncia Ranch is zoned Coastal, Agricultural Production Zone, and Agriculture and Conservation District, 60-acre density. Both zoning districts have a 60-acre density, which permits

one primary single family residence for each 60 acres; therefore, based solely on its density the appraised ranch can be developed with **12.5 single family residential dwelling units**. **The Highest and Best Use**, before the conservation easement, of the Poncia Ranch is to issue a notice of non-renewal of the Williamson Act contract, **subdivide the property into as many residential homesites as permitted by zoning**, and utilize the range land for grazing. **(Assuming that 12.5 single family residential dwelling units occupy 2 acres each, we convert 25 acres)**

63. Sea West Ranch (18 acres were developed + 2 golf courses + equestrian center)

The subject property consist of 748.39 acres – **9 parcel development site**. Prior to the presently approved 9 parcel development, the owner of the subject property attempted to realize a much more intensive development of the site. The **proposed development included a hotel, two 18 hole golf courses, residential units and an equestrian center**. **Highest and best use** of the subject property is for the construction of infrastructure improvements to serve the 9 parcels, allowing the sale of the parcels for residential estate and agricultural (equestrian) use.

64. Giacomini Ranch (printed report) (0 acres were developed)

The property has 826.86 acres. Zoning C-APZ-60, A-60. **Highest and best use: continued use as a horse boarding/training facility and/or for agriculture buildings for pasture ranch or dairying**. The existing improvements (horse boarding and training facilities) are felt to be misplaced in that they are located too far from the populated areas they would normally serve.

65. Puerco Canyon (48 acres were developed)

Highest and Best Use: Open space until public services can be extended for large scale single-family estates or ranchettes. Certificates of Compliance have been granted for each parcel allowing single-family residential development. Zoning: the subject property is zoned A-1-1 (light agricultural) and -2-5 (heavy agricultural). Both are zoning that permit restricted residential usage, subject to slope consideration and development plan approval. The a-1 zoning permits single family housing (1 per legal parcel). The A2 zoning allows multi-family dwellings of no greater than 6 tenants. The California Coastal Commission overlay limits the residential footprint to a maximum area of 10,000 square feet. Per its zoning designations, **the acreage can accommodate single family residential usage (one per site)** or multi-family dwellings of no greater than six tenants. By looking at the property ownership, it turns out that the property has **24 parcels**. **(24 parcels can be converted to residential development, we assume that each development parcel would be 2 acres, so the total acreage developed would be 48 acres)**

66. The Fernandez Ranch (6 acres were developed)

Zoning: A-4: Agricultural Preserve. **Highest and best use:** grazing/rural residential. Of the 4 parcels, APN 362-050-005 has the most potential for use as a home site due to its frontage on Christie Road and relatively level topography for a portion of the site. The highest and best temporary use for the subject site is for grazing land, although it would not be expected to sell to an income motivated buyer for this purpose. **The highest and best use of the subject is continued low-grade agriculture and grazing and some potential for rural residential use**. While legally permissible under the zoning and physically possible to construct a single family residence on

three of the four parcels, it does not appear financially feasible to develop the property for residential use. The costs of development would likely be prohibitive.

67. Miramontes Ranch/Mills Creek - no full appraisal available, just appraisal review (8 acres were developed)

Property has 675 acres. **Highest and best use:** As vacant: Residential, private recreational, or winery. As improved: Single estate with possibility of long-term subdivision development. According to the appraisers, the subject property consists of five contiguous parcels of vacant, undeveloped hillside land with historic use for grazing and flax farming. **Four of the parcels, totaling 555.73 acres, contain gently rolling areas that can accommodate construction**, while the other parcel, at 120 acres, contains primarily steep slopes with little usable land. The property is more than ½ mile from an all-weather public road. Access is available by easement to the four more buildable parcels, but there is no clear legal access to the other parcel. Although the appraisers recognized that zoning regulations offer some potential to develop the parcels beyond single residences, the high cost of such development makes it economically unattractive.

68. Moore Creek (is in fact called De La Briandais Ranch) (2 acres were developed)

The subject property is composed of four contiguous wooded hill parcels combining to an area of 673 acres, improved with two older single-family residences. Zoning – Agricultural watershed. This classification has a minimum subdividable area of 160 acres. The present zoning allows single-family residential development on legal lots, as well as agricultural uses and secondary residences in conjunction with agricultural pursuits. **Highest and best use:** residential combined with passive recreational with the possibility of developing the knoll parcel with an estate residence for a total of **three residences**, each on a separate parcel. The subject's shape, topography, and soil conditions as well as developed access and utilities make the property adapt well for 3 residential sites. **Two of the four parcels have residences developed.** A third parcel in the central area of the ranch has a knoll with a 1000 ft elevation providing views to the south and west. The knoll has a rough graded road accessing the upper and mid knoll areas, with several possible building sites. The fourth parcel is not developable as a home site due to steep terrain and distance from the county Road.

69. Las Trampas-Gleason (268 acres were developed)

Property has 640 acres. Zoning - A-2, General Agricultural District. **Highest and best use:** Several large estate home sites, with some speculative potential for a minor subdivision into several additional home sites. The subject property consists of **10 contiguous parcels** proposed for addition to Las Trampas Regional Park. Its topography is primarily steeply sloping hills with some gently sloping areas. **Its zoning allows one residential unit per parcel** (five-acre minimum), subject to water supply and soils restrictions. The property lies outside of the county's urban limit line and is zoned for agricultural uses. The appraiser notes **that the property's zoning might allow construction of a maximum of 134 residential units**, but that physical limitations make any intensive development extremely unlikely. Eight of the ten subject parcels are greater than five acres and might be developable as single-family home sites, but only one parcel is currently developed, the availability of water for other parcels is unknown, and physical limitations to development appear to be severe. The appraiser concluded that the property had only limited

speculative development potential, but that the existing residence could be replaced with a larger estate-style home

70. Meins Landing (NO APPRAISAL REPORT)

71. Rancho Corral de Tierra (68 acres were developed)

The subject property consists of approximately 4,262 acres of land. **The highest and best use of the subject is considered to be the future development of 34 potential rural residential building sites** averaging in size at approximately 125 acres, although the most likely scenario would be some type of clustering concept at the lower elevations near Highway 1.

72. Hamilton Wetlands (NO APPRAISAL REPORT)

73. Bahia (424 acres were developed) – no full appraisal available just appraisal review

Property has 638 acres. Zoning: PC: Planned Community, subject to master planning, with Bayland Overlay District. **Highest and best use: Recommence entitlement process for development of a residential subdivision.** The subject property consists of several non-contiguous parcels that range in type from man-made peninsulas and wetlands to oak studded hillsides. In January 2001 the Novato City Council approved the proposed 1995 Bahia Master Plan, which provided for the development of 120 townhouses, 125 single-family detached homes, and 179 custom homes (**424 units total**), as well as a clubhouse and other amenities. In May 2001, however, the Master Plan was placed on the ballot and rejected by the voters. The result was to set aside the Master Plan, remove all entitlements, and require any new application to be subject to the current zoning code.

74. Unocal OTD's Guadalupe Oil (NO APPRAISAL REPORT AND NO GIS LAYER)

75. Hammons Property (NO APPRAISAL REPORT)

76. Soka/Gillette Ranch (NO APPRAISAL REPORT AND NO GIS LAYER)

77. Pleasanton Ridge – Owen Property (18 acres were developed)

The property consist of 955 acres. Zoning: A: agriculture minimum parcel size 100 acres with primary residence and secondary dwelling unit allowed on each parcel. **Highest and best use rural residential.** The highest and best use for the subject property is likely to be a site for **a 3+ homes**, additional density might also be considered as a future possibility. The property is zoned for agricultural use, which allows one residence per 100 acres minimum lot size. Therefore, the subject could legally support **nine homes (per size) if subdivided**. However, inhospitable terrain, accessibility issues, potable water and costs to extend roads and utilities reduce the reasonable number of potential building sites.

78. Purisima Farms (12 acres were developed)

Highest and Best Use -as unencumbered by easements (“before”): Development of **six home sites** in conjunction with continued farm operations. Zoning PAD: Planned Agricultural District. **(Six homesites each of approximately 2 acres would lead to a total developed area of 12 acres).**

79. Alum Rock Park – Kirk Property (NO APPRAISAL REPORT)

80. The Cedars – Raiche/McCrory – no full appraisal available just appraisal review (40 acres were developed)

Property has 520 acres. RRD: Resource and Rural Development, 320-acre density. Highest and best use - Development of a rural residential/recreational homesite. Development to rural residential/recreational use is both legally and physically possible as indicated by improvements historically on the property and developed on nearby properties. There are rural recreational/residential improvements being developed within the neighborhood – which proves that rural residential development would be financially feasible. The remote location of the subject property and somewhat difficult (seasonal) access could limit the development of any structural improvements. County and state fire requirement[s] could require improvement of at least a portion of the access road that could make development infeasible financially. It is unlikely that the property would be subdivided or split, due to the zoning. There are no other known uses for the subject property that indicate a more productive use than for rural recreation. Thus, the maximally productive and highest and best use of the subject property as though vacant is for development of a rural residential/recreational homesite. The appraiser determined that three comparable sales indicated a **40-acre homesite** value for the subject property of about \$140,000 to \$150,000.

81. Montesol Ranch (152 acres were developed and 1728 acres of vineyard)

The property exists as a roughly 7,266-acre holding, with the potential through zoning and certification of historical parcels to be divided into numerous rural parcels. Additionally, a recent study indicates that the property has a significant amount of land that could be developed to vineyard use. The **Highest and Best Use** of the subject property, as though vacant, is concluded to be for continued residential use with a future potential for a **division into multiple rural residential parcels, with vineyard development potential**. **Current Use:** The current use of the property is for rural residential and recreational uses and a variety of agricultural uses. The subject property has the potential for up to seven legal parcels in Lake County and up to 69 legal parcels in Napa County, based on historical surveys and recorded documents. The zoning for the property would also allow division of the land, but it is concluded that the Certificate of Compliance process is likely a more reasonable development scenario, as it would not require a formal subdivision of the land. It is concluded that the property certainly has the potential for rural residential development, but the number of parcels would not be fully known until an attempt was made to initiate such a development. The property is concluded to have a substantial number (**up to a maximum of 76**) of legal parcels. **Vineyard development:** of the land with less than 30% slope, a total of 424 acres (gross) of land is considered to be “very well suited,” 734 acres are considered “well suited” and 570 acre are considered “marginally suited” for vineyard development, for a total of **1,728 acres**. **Highest and best use:** The subject property is mostly zoned within the Agriculture Watershed zoning district in Napa County, which provides for a variety of agricultural uses as well as rural residential and recreational uses. The land in Lake County is zoned either Ag Preservation Zone, which is also indicated to allow agricultural and rural residential uses, or Open Space, which allows agricultural uses, but restricts residential development. The zoning is the only apparent legal restriction on the property. Under the existing zoning, the property could theoretically be divided into numerous rural residential parcels with agricultural uses. **Rural residential development is indicated to be physically possible on land in the area. Vineyard**

development is also a proven financially feasible use, as demonstrated through recent vineyard developments (including the small, “experimental” vineyard on the subject property) throughout Napa and Lake Counties. It is concluded that division of the property utilizing existing historical parcels and rural residential development, along with vineyard development are financially feasible uses for the subject property.

EXTRA PROPERTIES

82. Clayton Ranch – 691 acres total (0 acres developed)

After considering the four tests for evaluation the highest and best use of the subject property, that is legally permissible, physically possible, financially feasible and maximally productive, the **Highest and Best Use of the subject property is judged to be its continued ranching/grazing agricultural use.**

83. Parker Ranch (very complex appraisal report and addenda) – 2344 acres total (14 acres developed)

A total of 2554.32 acres. **7 legal lots**, 365 average acre/lot. It is our opinion that the **Highest and Best Use** of the subject land according to the described “before Draft Conservation Easement” condition is as follows: Harvest Timber Resource as currently permitted; Mineral mining as contracted per lease and permitted by Reclamation Plan and Gravel Mining expansion opportunity; Use or sale as single multi- parcel ranch estate. Consideration of potential lot line adjustments to enhance configuration. Enhance existing access roads to serve potential residential building sites. Continued use or lease of lands for grazing of livestock. Market functional groupings of parcels to sell ranch in components as market conditions permit. Zoning designations are briefly described as follows:

Zoning: TP: Timberland Production District (Chapter 20.364) Principal Permitted Uses: (A) Coastal Residential Use Types Family Residential: Single Family. Vacation Home Rental (B) Coastal Agricultural Use Types: Forest Production and Processing: Limited Tree Crops (C) Coastal Open space Use Types. Passive Recreation. Conditional uses include uses such as farm or employee housing; and general forest production and processing, mining, and fish and wildlife habitat management. **In no case shall there be more than 4 dwellings located on a single parcel except when implementing cluster development.** FP: Flood Plain Combining Districts (Chapter 20.420)

84. Freeman Ranch Easement - 662 acres total (printed report) (0 acres were developed)

The property has 659.81 acres. Zoning 415.18 acres AG-11-320 (within the coastal zone) 244.63 acres AG-11-100. **Highest and best use: The ranch is to be used into perpetuity for agricultural and conservation valued purposes.** As vacant – highest and best use – grazing or other appropriate agricultural uses.

85. Estero Ranch – 534 acres total (10 acres were developed)

It is the appraiser’s opinion that the highest and best use of the subject land as if unencumbered by lease, is for the development of a coastal fronting residential rural estate property. This would allow for the construction of one (1) Primary Residence along with secondary

farm residence and ancillary out buildings for agricultural uses of the property including livestock ranching and or recreation. The subject is assumed to be a single legal lot of record. The property zoning is designated as follows: Zoning: LEA CC B6 160/640 BR G SR. Designations: LEA - Land Extensive Agriculture; CC- Coastal Zone; B6 - Combining District 160 acre per unit/ 640 acre lot area minimum; BR- Biotic Resources; G- Geologic Hazard; SR- Scenic Resources. The subject property in its “as-is” condition is encumbered by a ground lease. This lease encumbers a 12.8 acre portion of the 547.85 acre subject parcel. The subject is encumbered by a Williamson Act Land Conservation Contract. This encumbrance, as is consistent with zoning, would not allow division of the property as the 547.85 acres is below the 640 acre lot area parcel size minimum. A single family residence is an allowable use with a total of 3 units per the 160 acre per unit per county zoning, however the existing Williamson Act Contract limitations prevail only allowing one. **Highest and Best Use of property for 5 estate home sites. (5*2= 10 acres of development.)**

86. Elkhorn Slough – 1229 acres total (No new development is likely to take place on this parcel)

Highest and Best Use: Parcel (038) is within the coastal zone and is zoned for residential use. Under this zoning agricultural uses would also be allowed. **The zoning would allow for the parcel to be split into two parcels**, though slopes and coastal zoning may mitigate any subdivision potential. All considered, it appears unlikely that the county would allow parcel (038) to be subdivided. Given the parcel’s location, aesthetic attributes, and surrounding uses (conservation/park land) it is the appraiser’s opinion that the **highest and best use of parcel (038) is conservation/park land**, while realizing that residential and agricultural uses are competing uses that play a role in determining the parcel’s value.

PARCEL (004): This is a small acreage parcel of approximately **7.80 acres**. This parcel is currently improved with a single family dwelling. The parcel is not currently farmed but has been in the recent past. The current zoning will allow for the development of one single family dwelling and there is a strong demand in the area for small acreage residential sites. It is the appraiser’s opinion that the **highest and best use of parcel (004) is to be developed as a single family residential home site with farming of the remaining acreage** an accessory use. Approximately 50.5 acres of the subject property is currently farmed in strawberries. The moderate to steep slopes and sandy soil require careful working of the land to prevent erosion, but the land is physically feasible to farm.

Zoning: Subject parcel (038) is zoned RDR/40 (CZ) Rural Density Residential, **40 acre minimum building site. This zoning allows one single family dwelling per 40 acre site.** CZ indicates that subject is within the Coastal Zone. The zoning could possibly allow parcel (038) to be split into two parcels. In spite of zoning any subdivision of the existing parcels would also depend on other factors, such as slopes, soils, and water development. The county would also require development of roads and infrastructure for any subdivision to take place. The appraiser spoke with a planner for the Monterey County Planning Department concerning the subject property, and while nothing can be known for certain without going through the subdivision process, given the subject’s slopes and location within the coastal zone, he thought it highly unlikely that a subdivision of the parcel would be approved.

87. Burdell Ranch – 751 acres total (printed report) (156 acres were developed)

Total area - 737 acres. Zoning 200 acres around the airport are zoned M-3 planned industrial district. The remaining 537 acres are zoned RCP, Resort and Commercial Recreation. **Highest and best use: development of 77 acres of land at the southwest corner, sale of 78 acres for expansion.** Retention or sale of the remaining 582 acres of land for agricultural or open space usage. 77 acre development along with future airport expansion and wetlands or recreational use is valid. The 77 acre site is included in the Novado sphere of influence and future development would require the annexation of the site to the City of Novado. (77+78= 156 acres.)

88. Richardson Ranch – 725 acres total (10 acres were developed)

The density of development for the parcel is one unit per 160 acres, limiting residential development to up to four primarily residences and one or more residence for full-time Ag employees. Uses permitted on the property include rural residential uses, low intensity agricultural uses and timber production. **Highest and best use: Development of up to four primary residences on a single parcel** and one or more supporting Ag employee residences. From the standpoint of physical and legal feasibility, there are a number of residential and agriculturally oriented uses permitted with or without a use permit which are appropriate for the subject property pursuant to the RRD and TP CC sections of the zoning ordinance. (5*2 = 10 acres of development.)

89. Red Hill Ranch – 972 acres total (10 acres developed)

3 parcels a total of 910.63 acres. Zoning LEA 160/640 160 acre density, 640 acre minimum parcel size. The property cannot be further subdivided based on the existing zoning and there could be a maximum of **five dwelling units** constructed on the site based on the existing density. Current use – as a pasture ranch. **Highest and best use.** A coastal estate, recreational land and limited timber production

90. Napa Sonoma Marsh Acquisition – 8969 acres total (2 acres were developed)

(Three parcels napa marsh project) Parcel 1 – 528 acres, Parcel 2 80 acres. Zoning: AE-B-5 with a 100 acre minimum building site. This is an Exclusive agricultural District because of its location within the flood plain and in an area devoted to agricultural uses. **Highest and Best Use: For agricultural purposes such as pasture and hay production. Any higher development is impossible because of the location within a flood plain.** Parcel 3- 217.26 acres. This parcel could be developed with **a single-family residence**, and it has some homesite possibilities on its ridge line. However, it is adjacent to a landfill therefore, the highest and best use is agricultural primarily grazing with the potential for a homesite with westerly view from the ridge line.

Cullinan Ranch – 1532 acres total

Report 1: Area 1493 acres, zoning agriculture. It is a diked wetland on, or below sea level. Present use: dry farming to oat hay. **Highest and best use conclusion: that the property will continue to be used for growing oat hay for the foreseeable future, unless it is acquired for conservation purposes. Only a remote potential exists for the property to be purchased for ultimate intensive development.**

Report 2: **Highest and best use:** Master Planned low density residential development. In the review of all factors, it is the opinion of the appraisers that **it is reasonable to assume that the subject property has a reasonable potential for development.** The subject property is diked/leveed former marshland that has been utilized for agricultural use for almost 100 years. The property's proximity and access to the city of Vallejo are considered to place the property in the path of

development. There is a reasonable probability of annexation into Vallejo and re-zoning of the property which would allow a higher density residential development (0.5 to 8.7 units per acres) than the 1 unit per 20 acres under the current A-20 Solano county zoning. **Highest and best use would be for development of a residential project at a typical or allowable density upon annexation into Vallejo and rezoning.**

91. Coast Dairies Acquisition - 6617 acres total (278 acres were developed)

35 assessor's parcels, totaling 7,500 acres. 7.4 miles of ocean frontage. The subject property is zoned for commercial Agricultural use with some special uses designations for the mining operations. **Highest and best use:** bulk sale of proposed legal parcels for residential and agricultural purposes, and utilization or preservation of certain natural resources. An application for **139 unconditional certificates of compliance was submitted**. This appraisal assumes that the option holder will obtain the COC for at least 43 deed and subdivision parcels and possibly as many as 139. Once the COCs are obtained, the owner can begin selling individual parcels immediately. In addition to the rural residential uses noted above, the site has a substantial amount of timber that can be logged through a permit from the state on a sustainable basis. The highest and best use of the subject site is to sell off the proposed legal parcels for rural residential uses after lot line adjustments have been completed, submit a sustainable harvest plan to the state and commence logging and continue farming the lower coastal plateaus with artichokes and Brussel sprouts.

92. Cascade Ranch Project – 691 acres total (no new development)

Zoning: the zoning for the subject property is PAD – planned agricultural district which is intended for primarily agricultural uses. **The highest and best use** of the subject property includes continued cultivation of artichoke and Brussels sprouts in the prime soils areas as limited by water availability and dry farming for other portions of the property. **The highest and best use would also include development of a new home of up to 4000 square feet at the location of the existing house** upon termination of the life estate. A single residence and agricultural production or cultivation are permitted.

Appendix 3. Ecosystem dynamics of California grasslands: Future climate and management scenario modelling

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Supplementary Information

Figure A3.1: Differences in soil C fluxes in the compost simulations relative to the control simulation. Gross soil C storage in all three pools (green) nitrous oxide and methane emissions (red), and net soil C (blue) all increase after compost additions, with soil C storage peaking about 15 years after compost application, and greenhouse gas emissions continuing to gradually accumulate but plateau before the end of the century. These figures do not include C in the form of plant biomass.

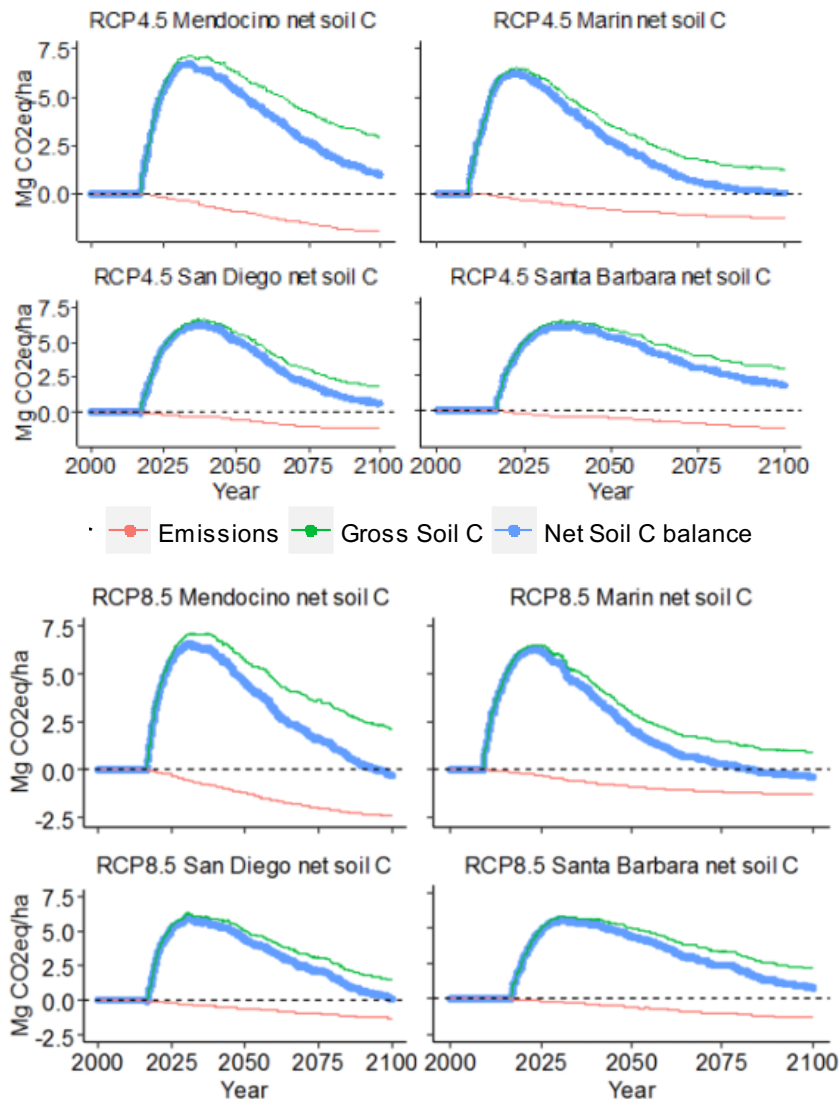


Figure A3.2: DayCent Model output shows that bulk soil organic carbon, the sum of active, slow, and passive pools, are higher in the wetter, northern sites of Marin and Mendocino compared to the two drier sites of San Diego and Santa Barbara. These values are not direct measurements,

