California State Senate
SENATOR NOREEN EVANS
2nd SENATE DISTRICT
Chair, Select Committee California Wine Industry
"In Vino Unum"

STATE CAPITOL
SACRAMENTO, CA 95814
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October 30, 2014

Informational Hearing held March 18, 2014 on "Sustainable Winegrowing: Impacts on Water Drought, Greenhouse Gas Emissions and Retail Sectors"

Re: Enclosed hearing transcript and supportive materials.

As the Chair of the Senate Select Committee on California's Wine Industry, this was my last informational hearing of the Committee. It was a bittersweet moment as I've had the pleasures of Chairing the Wine Committee in both the Assembly and the Senate for a total of ten years. However, I have chosen to leave the Senate at the close of this year's legislative session and return to life in the private sector and the practice of law after 21 years of public service.

The topics of the hearing were timely and of significance to both the wine industry and the Committee Members. It was gratifying to hear how much progress the winegrowers and vintners have made during the past ten years towards sustainability. They have increasingly evolved towards becoming more efficient in their usage of water and energy. The potential impacts of the drought and greenhouse gas mitigation efforts, as well as the promotional aspects of sustainable winegrowing and tourism were discussed in the hearing. In addition to the transcript of the informational hearing, enclosed are the materials provided by the speakers relevant to their presentations.

It has been a privilege to have the opportunity to work with so many involved in this valuable industry to our state. I also want to thank my fellow legislators that have served with me on the Senate Committee and Assemblyman Wesley Chesbo, my counterpart on the Assembly Wine Committee. After traveling to other wine regions in the world, it is rewarding to see that California is a leader in sustainability, organic and biodynamic farming worldwide.

Sincerely,

Noreen Evans

NOREEN EVANS
Senator, 2nd District

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0115

California Legislature

Sustainable Winegrowing
A Joint Hearing of the Assembly Select Committee on Wine, the Assembly Select Committee on Sustainable and Organic Agriculture & the Senate Select Committee on California's Wine Industry
Tuesday, March 18, 3:00 PM -- State Capitol, Room 2040

Opening Comments:

- Assemblyman Wesley Chesbro, Chair, Select Committee on Wine
- Senator Noreen Evans, Chair, Select Committee on California's Wine Industry
- Assemblymember Mariko Yamada, Chair, Select Committee on Sustainable & Organic Agriculture

Potential Drought Impacts on the California Wine Industry and Vineyard & Winery Water Efficiency

- Steve Smit, Constellation Wines US
- Devon Jones, Mendocino Farm Bureau
- John Williams, Frog's Leap, Napa Valley
- Jerry Reaugh, Paso Robles Agricultural Alliance for Groundwater Solutions (PRAAGS) and owner of Soreno Vista Vineyards

Energy Efficiency & Greenhouse Gas Mitigation Efforts

- Chris Savage, E&J Gallo Winery
- Bill Cooper, Cooper-Garrod Estate Vineyards
- Christy Pestoni Abreu, Pestoni Family
- Matt Belair, Delicato Family Vineyards

Sustainable Winegrowing Ecotourism & Promotion

- Karissa Kruse, Sonoma County Winegrowers
- Josh Nelson, Selland Family Restaurants (The Kitchen, Ella, and Selland's Market, Sacramento)
- Amy Hoopes, Wente Vineyards

Public Comment

Potential Drought Impacts on the California Wine Industry and Vineyard & Winery Water Efficiency

Constellation
Brands

Steve Smit is the Vice president of Vineyards and Grape Management for Constellation Brands, one of the leading premium wine companies in the world. With over 25 years of managing vineyards, Smit now oversees more than 12,000 acres of vineyards in various regions of California, as well as managing the purchase of grapes for all their West Coast wineries, covering over 40 brands. Smit completed his B.S. in Chemistry at UC Berkeley and then received an M.S. in Viticulture at UC Davis, where he studied the effects of canopy management on wine quality. He is Chairman of the Board of Directors of the California Sustainable Winegrowing Alliance, on the Board of the American Vineyard Foundation, and Chairman of the Alexander Valley School District Board of Trustees.

Constellation Brands, Inc. · 801 Main Street · St. Helena, CA 94574
Direct: 707-967-7111 · Fax: 707-967-2129 · www.cbrands.com

Devon Jones
Executive Director, Mendocino County Farm Bureau

Devon attended UC Davis, where she received her Bachelor of Science degree in Animal Science and her Master of Science degree in Ruminant Nutrition. Devon moved to Mendocino County in 2004 and accepted the position as the Executive Director of the Mendocino County Farm Bureau in 2009. While working for Farm Bureau, Devon has been engaged in a number of issues with the primary areas of focus being water rights, water quality, land use and air quality.

FROG'S LEAP

John Williams

Owner & Winemaker

John Williams grew up in Western New York and originally attended Cornell University to extend his studies as a dairyman. A fortuitous work-study program at Taylor Wine Company and a few bottles of wine later, John entered the Enology and Viticulture Masters Program at UC Davis. Following Davis, he returned to the Finger Lakes as the start-up winemaker at Glenora Wine Cellars. In 1980 John returned to the Napa Valley to assume winemaking duties at Spring Mountain Vineyards.

Frog's Leap was founded in 1981, and John has been the Owner and Winemaker of this noted Napa Valley Winery since its inception. Known for its whimsical exuberance, Frog's Leap, a small family winery, produces elegant wines with superb balance, all organically grown and naturally fermented: Sauvignon Blanc, Chardonnay, Zinfandel, Merlot, Cabernet Sauvignon, and Rutherford.

8815 Conn Creek Road P.O. Box 189 Rutherford California 94573
707.963.4704 FAX 707.963.0242 www.frogsleap.com

Jerry Reaugh
Founder and Chairman PRAAGS
Paso Robles Agricultural Alliance for Groundwater Solutions

Business Experience:
Silicon Valley Businessman and Executive 1969 to 1997
Small Business Owner 1987 - 1995
Winegrape Grower Paso Robles 1998 to present

Volunteer &Service:
Founder and Chairman PRAAGS 2013 to present
Paso Robles Basin, Blue Ribbon Committee, alternate, 2012 to 2014
Paso Robles Wine County Alliance
  Board Member and Treasurer, 2000-2005
  Numerous committees and projects
Friends of Hearst Castle
  Board Member, Treasurer and President, 2000-2008
Hospice of the Valley, San Jose
  Board Member and Treasurer, 1994-1998

Education:
Claremont McKenna College, BA Economics and Liberal Arts
Stanford University BS, MS Industrial Engineering
  Tau Beta Pi
  Terman Engineering Scholastic Award

GROW WILD
PASO ROBLES WINE COUNTRY

PASO ROBLES: PASO ROBLES WINE COUNTRY

A Sense of Place

Halfway between the two main California metropolises of Los Angeles and San Francisco is Paso Robles Wine Country. Located along California's famed Central Coast, the Paso Robles winegrape growing region's climate is perfect for the production of award-winning premium wines. A long growing season of warm days and cool evenings give rise to vibrantly ripened fruit with dynamic flavor profiles that translate beautifully in your glass of **Paso Robles wine**.

Traversing the landscape you will find 26,000 vineyard acres, producing more than 40 winegrape varieties - from Spanish to Italian, Bordeaux to Rhône, including the area's heritage variety Zinfandel. The styles of wine are diverse in this very distinct region.

Along your journey through Paso Robles Wine Country, take time to stroll the historic downtown to shop and dine. Boutique stores, wine country cuisine, and tasting rooms fill the blocks surrounding Paso Robles' Downtown City Park. A scene right out of a Norman Rockwell painting, Paso Robles' downtown completes the picture of Paso Robles Wine Country.

Neighboring Paso Robles along the coast are the towns of San Simeon, home to Hearst Castle on the north, and the fishing village of Morro Bay to the south. In between you will find Cambria, Harmony, and Cayucos. All are within a short drive and worthy of your exploration. Much like the marine air influence to the winegrapes, the coast is a perfect complement to your Paso Robles Wine Country experience.

Energy Efficiency & Greenhouse Gas Mitigation Efforts

Chris Savage
Senior Director of Global Environmental Affairs,
E. & J. Gallo Winery

Chris Savage is Senior Director of Global Environmental Affairs for E. & J. Gallo Winery, the world's largest family-owned winery.

In his current capacity, Chris directs all environmental compliance efforts for E. & J. Gallo Winery as well as for its associated businesses which includes 11 producing wineries, a bottling operations facility, a glass manufacturing plant, printing and label manufacturing operations and Gallo's vineyard operations. Additionally, Chris handles global environmental issues that face or could impact Gallo's international business.

Since joining E. & J. Gallo Winery in 2001, Chris has participated in or led a number of notable efforts including helping establish and grow the Winery's corporate and environmental affairs group, working to qualify the E. & J. Gallo Winery as the first winery in the United States to receive the International Organization of Standards ISO 14001 certification for managing and reducing its impact on the environment, and expanding and refining the wine industry's Code of Sustainable Winegrowing Practices.

Chris is a member of a number of international organizations including the International Federation of Wine and Spirits (FIVS) and the International Organization of Vine and Wine (OIV). Additionally, Chris has been an active member of the Manufacturers Council of the Central Valley since its inception in 1991 and he currently sits on the organizations executive committee as its president. He is involved with the Wine Institute where he serves as the chair of the group's environmental committee. He is also a member of the California Sustainable Winegrowing Alliance where he serves on it's Board of Directors.

Chris is a graduate of Humboldt State University with a degree in biology. He has also been active in his local community as a Planning Commissioner for the City of Riverbank and a member of the Stanislaus Consolidated Fire District's Board of Directors, as well as a number of other civic advisory groups. He is a native Modestan where he still resides with his wife Heidi and their daughter Lauren.

E&J Gallo Winery

Passion For Quality

Vinemaking

Viticulture

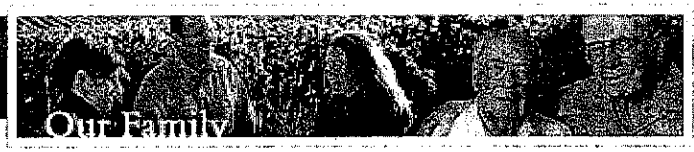
Sales & Marketing

Research

Home > Passion For Quality

Passion for Quality

Since its inception, the hallmark of E. & J. Gallo Winery's founders has been their unwavering commitment to quality. By taking the utmost care in each and every step of the grape growing and winemaking process, E. & J. Gallo Winery has consistently delivered outstanding wines for every occasion and price. The Winery continues to be at the forefront of the winemaking industry by researching and determining the very best regions to grow grapes, using the most effective techniques for grape growing, and lastly, employing the best ways to craft world-class wines.



Our Family

Since brothers Ernest and Julio Gallo began to turn their dream into reality over 80 years ago, the roots of the Gallo family tree have extended deep into the Winery. Today their children, grandchildren and great-grandchildren work in the Winery, carrying on the family tradition and values - a strong work ethic, a drive for perfection and a focus on quality.

The Gallo family still believes family ownership is the most effective way for the Winery to continue as a world leader in the wine industry.

Today, E. & J. Gallo Winery is the world's largest family-owned winery and the largest exporter of California wine.

Bill Cooper
Vintner, Cooper-Garrod Estate Vineyards

Bill Cooper, vintner at Cooper-Garrod Estate Vineyards in the Santa Cruz Mountains Appellation, is fourth generation on land farmed by his family since 1893 with the fifth generation actively engaged. Apricot and prune orchards planted by his great-grandparents yielded to an equestrian center in the 1960s, with vineyards added in the '70s and '80s, followed by a winery in the 1990s. Recognizing the business benefits of sustainable and organic practices, Bill has been at the helm of Cooper-Garrod's third-party certification in both arenas. The vineyards and the winery are CSWA Certified Sustainable and CCOF Certified Organic.

Prior to joining the fledging winery in 1996, Bill completed a career in the Foreign Service with postings that included Singapore, Bangkok (twice), Warsaw, Paris, and New York. He earned his B.A. in International Relations from the University of California, Davis and served two tours with the U.S. Army in Vietnam. Bill currently serves as a District Director of the Wine Institute, Director and Vice-President of the West Valley-Mission Community Colleges District Foundation, and Director of the Saratoga Foothill Club Historic Landmark Foundation. From 2002 to 2011, he was a Director of the California Sustainable Winegrowing Alliance and served as Chairman 2007-2008. Bill and his wife Doris enjoy two daughters who were born in Paris and grew up on the family farm.

COOPER·GARROD

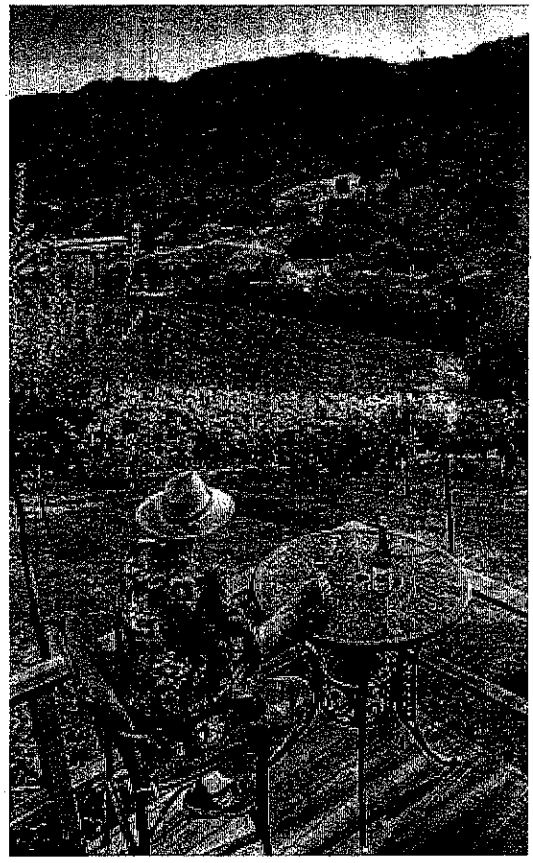
Estate Vineyards

ABOUT US

The sunny days, moderate nights, and long growing season of the Santa Cruz Mountains, which are south of San Francisco and overlook the Pacific Ocean and the San Francisco Bay, have long been recognized as ideal for world class wines.

The Garrod family began involvement with California agriculture and open space in 1893, purchasing lands from the Mount Eden Orchard and Vineyard Company. Our label recalls glorious apricot and prune blossoms which enhanced spring views from our hillside early in the previous century. Since 1972, aging orchards have been replaced with grapes which thrive in this microclimate.

So continues the agricultural tradition begun by winemaker Bill Cooper and vineyard master Jan Garrod's great-grandfather. Winemaker Emeritus George Cooper refined his craft by learning from his fellow vintners in the Santa Cruz Mountains, Napa Valley, Burgundy, and Bordeaux.



Bio-Christy Pestoni Abreu

Christy Pestoni Abreu is Community Outreach Director for Upper Valley Disposal & Recycling and the Clover Flat Resource Recovery Park, formerly Clover Flat Landfill. This family business founded by her father Bob Pestoni, Upper Valley Disposal & Recycling and its affiliated companies has evolved over the past 60 years to include collection, disposal and processing of waste, recycling, composting, a small winery and more recently, renewable energy from landfill methane gas. Christy was born and raised in St Helena and her family heritage began in the Napa Valley in 1886 when Great Grandfather Albino Pestoni arrived from Switzerland and started a winery.

Christy has a strong commitment to the community and is a member of the St Helena and Calistoga Boys and Girls Club board of directors 2001 to present. She is an Executive Board Member of The California Refuse and Recycling Council, Sacramento Ca., and a board member on Sustainable Napa County, a local non-profit environmental advacey partner for policy makers, businesses and community organizations.

Christy has made a life career in the field of family business and education in the Up Valley community focusing on sustainability, resource recovery and environmentally smart business practices.

BA/ Communications - St Mary's College 1989
Employed by Upper Valley Disposal & Recycling and affiliated companies since 1990

Our Commitment to Napa County' Climate Action Plan

By 2020,

- UVDS and NCRWS will avoid *103,862 metric tons of carbon equivalents* for Napa County through waste diversion activities and compost application.
- The companies will *generate 638 kWh* of renewable electricity and *offset 40,820 gallons of diesel* with renewable fuels.

We are Net-Zero today. Phase 2 of CARB's AB 32 Scoping Plan has set a goal for the Waste Industry to achieve 'Net Zero' by 2030. We are currently achieving this goal.

Net Zero = Total Direct GHG from Operations – Avoided GHG from Landfill Diversion Activities = 0

The County Climate Action Plan is looking at four main sectors for emission reduction opportunities. They are:

1. Agriculture & Natural Resources
2. Buildings & Energy
3. Transportation & Land Use
4. Water & Waste

UVDS and NCRWS will help achieve GHG reductions under each category by the following activities.

CAP Category	UVDS and NCRWS Activities		
Agriculture and Natural Resources	**1a)** Conserve natural resources through recycling activities.	**1b)** Conserve water and soil resources through the creation (and application) of compost.	**1c)** Assist the agriculture industry in meeting GHG, zero waste and water usage goals through better materials management, gasification of woody grape vine waste and application of compost.
Buildings & Energy	**2a)** Creation of renewable energy through solar panels, dry anaerobic technology and biomass gasification.		
Transportation & Land Use	**3a)** Reduce GHG association with transportation through the creation of biogenic CNG from dry anaerobic digestion technology.		
Water & Waste	**4a)** Significantly reduce total organics to landfill through better collection and technology.	**4b)** Expand and increase effectiveness of current collection programs (through outreach and education) to increase total diversion of recyclables from landfill.	**4c)** Reduce total water needed for local gardening, landscaping and agriculture through the production of soil amendments and compost.

Sustainable
NAPA COUNTY

2013 Highlights – 2014 Outlook

Energy Conservation and Efficiency

Napa County Energy Watch
Renewed a contract with PG&E for the 2013-2014 program cycle in the amount of $300,000 ($24,00 for Admin; $45,000 for marketing the program; $132,000 for direct to customer incentives and rebates; and $99,000 for work on climate action and energy planning) over the two-year contract. Customer segments include municipalities, special districts (including schools in the Napa Valley Unified School District), small and medium businesses, non-profits, and low- and moderate-income residents.

In **2013...**

- we evaluated or upgraded more than **70 facilities** countywide
- for a total of nearly **1.9 million kWh** in ***ONGOING* energy savings**...
- which already **exceeds our two year** goal of 1.7 million kWh
- equates to more than **$350,875 in continued and annual savings** for nonprofits, schools, and business customers in Napa County
- and amounts to the elimination and avoidance of **500 tons** of greenhouse gas emissions **per year.**

Napa County Energy Watch 2013 by the numbers

Kilowatt hours (kWh) saved	1.9 million
Number of facilities upgraded	50+
Annual savings for customers	$350,875
Greenhouse gas emissions avoided/reduced	500 tons

Without Gasser's creation of and investment in SNC, there would be no Energy Watch partnership in Napa County and therefore, none of the rebates and incentives at this level for our community. It is worth noting that **cumulatively**, since the PG&E contract began in 2010, **we have audited and upgraded 48 nonprofits and 240 businesses for a total of 5.9 million kWh reduced, which equates to 1,555 tons of GHG emissions reduced, and savings of over $1 million annually for customers in Napa County** – savings that will continue year after year.

Napa County Energy Watch in 2014 will focus on the expansion and enhancement of existing programs with more emphasis on small and medium business customers, including nonprofits. We are currently involved in planning meetings with PG&E to outline the contract and programs for the next program cycle, which will begin in 2015. **Our Energy Watch plans for 2014 include:**

- Work with **municipalities** to capture the roughly 30% improvement in energy efficiency that they have left to achieve;
- Make **nonprofits more efficient** by leveraging PG&E resources with the SNC Gasser Reserve Fund;
- Expand work with **small and medium business customers** using the Main Street Sweep model and targeted marketing;
- **Identify financing for retrofits** - group retrofit purchases in the commercial sector, On Bill

Financing, education of policy makers and business and financial leaders about new options for low interest financing, PACE (Property Assessed Clean Energy)

- Design and test creative approaches to helping **residential neighborhoods do both energy efficiency and solar** (group/neighborhood audits, upgrades, and group purchases of solar which can often mean a reduced cost)
- Work with the **Napa Workforce Investment Board to create an "Energy Manager"** circuit rider position for nonprofits that need regular and consistent energy management support and education but who cannot afford to hire a dedicated staff person or consultant.

In 2013, we were fortunate to have an intern - made possible through the Gasser Foundation - who assisted our Project Engineer on a **Water-Energy Nexus** report. In **2014 this report will help jurisdiction staff and leaders consider how to save energy and money through water conservation.** From what we understand, this is the first time a complete summary of countywide (jurisdiction by jurisdiction and cumulative) water supply, demand, use, and management has been put together.

Nonprofits

Our work with nonprofits on energy efficiency and education continues to be one of SNC's core initiatives. Through Napa County Energy Watch, our contract partnership with PG&E, we are able to bring additional resources into the mix, which helps stretch our Nonprofit Reserve Fund and leverages Gasser's investment.

2013 Nonprofit Highlights
Aldea
CANV – Food Bank
CANV – Los Ninos Childcare
CANV - Shelter
Napa Valley Hospice
Napa Valley Museum
Red Cross
Salvation Army

As part of our assistance – **SNC covers - through the special Reserve Fund made possible by Gasser – the post rebate costs for nonprofits so the cost to the nonprofit is zero**. In addition, one of our criteria is that payback is three years or less, **in most cases the payback is less than one year**, so this is a good return on investment and the **nonprofit begins seeing a positive return right away**.

PG&E Innovator Pilot

Through a competitive statewide process, PG&E awarded Sustainable Napa County $131,000 over two years to develop, test and evaluate strategies to educate building maintenance staff and occupants about systems, procedures, operations and maintenance, and day-to-day behaviors that will improve energy efficiency, assure comfort, reduce operating costs and reduce GHG emissions. **This linkage of occupant and maintenance behaviors, combined with tools and local "hands on" reinforcement will lead to permanent behavior change and expansion of conservation thinking in the community.** This leverages and supports the work performed through Napa County Energy Watch and enhances our Nonprofit Sustainability Program efforts. **Additionally, it will allow us to expand SNC's reach into the business community in 2014.**

In 2014 we will work with the County of Napa to develop outreach for the **Bay Area Regional Energy Network (BayREN)** program – funded through the CA Public Utilities Commission - and identify how to apply the resources available to our community for single family; multi-family; and commercial properties (a good first example of how this program can work is Riverside Apartments). In October 2013, SNC helped organize a BayREN workshop for multi-family property owners on to introduce the program and resources. For 2014 we are also in discussion about the best way to tackle "codes and standards" compliance and application to insure that the gains in energy efficiency in building and construction are actually being realized.

Renewable Energy

SNC supported Senate Bill 43 (Lois Wolk) - Community-Based Renewable Energy Self-Generation Program. This will make renewable energy self generation available to those who currently have no access - renters, homes that are shaded or poorly oriented, small businesses who lease, space limited public entities - by allowing neighbors to install a solar array on one property and buy into the power together. ***This bill passed and was signed by the Governor.***

In 2014 SNC will continue to learn more about the **County's exploration of joining Marin Energy Authority's (MEA) Community Choice Aggregation (CCA)** program. We are currently researching the program and how CCA might work for unincorporated Napa County customers, more about the MEA structure, renewable energy sources, tools and resources for customers, and other related questions and topics.

We will continue to work with **Napa Recycling and Waste and Upper Valley Waste Management** on **food composting and waste to energy options** for our community, including exploring innovative approaches and technologies, and how to pay for them.

Energy Planning and Policy

SNC Policymakers Summit

Funded by a $25,000 grant from PG&E, **SNC held its third Policymakers Summit in January 2013.** The "invitation only" forum is for elected and appointed public officials and key senior staff members from the County and each of the jurisdictions. Past events held in 2007 and 2010 were very successful, well attended, and presented timely topics, relevant information, and practical outcomes. Speakers from the Summit included statewide and regional leaders sharing information about collaborative and coordinated climate and energy policies, and how these policies can be replicated and customized for Napa County.

2013 Policymakers Summit Goals

- Update common knowledge base re: energy and climate policies and the impact on the county (economy, community, health, natural resources)
- Insights from leaders in other communities working in climate action – successes and challenges - and from regional/state experts and leaders
- Report from each jurisdiction about current climate action plans, policies, efforts (both governmental and community) – successes and challenges and a sense of where the countywide opportunities exist
- Opportunities for cost-effective approaches and available finance tools that can help pay for climate action/GHG reduction efforts
- How to communicate climate action (to community at large)
- Accountability to each other and mutual support to take action and next steps

Climate Action and Sustainability Plans

Napa County Climate Action Plan

In 2013 SNC worked closely with county staff and leaders on the development of the Napa County Climate Action Plan. We collaborated with other organizations (such as Napa Recycling and Waster, Napa Valley Vintners, Chamber of Commerce) and shared our comments so that when possible, input was aligned on issues of shared interest. The plan will begin to take a new shape in 2014 and will focus on balancing activities that produce GHG's with those that reduce them. The County's consultants have analyzed the new census data and projections, as well as a handful of new reduction measures. **In 2014 – SNC will likely play a key role in outreach and by providing assistance to the County on a stakeholder group to identify priority actions and strategies.**

City of Napa Sustainability Plan

SNC served on the Advisory Committee and worked closely with City of Napa's Sustainability Coordinator and Community Development Department to develop the Sustainability Plan for both

city operations and the community portion in the areas of energy efficiency, transportation, economy, natural resources, and community outreach. **For 2014, we will focus on implementation of a support plan for energy efficiency efforts as well as a review of the Sustainability Plan to identify priorities and action items that align with SNC's existing and planned projects.**

City of American Canyon Energy Efficiency and Climate Action Plan (EECAP)
SNC supported the American Canyon Energy Efficiency and Climate Action Plan and testified at both Planning Commission and City Council, and it was approved in February 2013. The plan includes energy efficiency for buildings, renewable energy, water conservation, and outreach and education. SNC and NCEW are named frequently throughout the plan as a partner on energy efficiency as well as outreach efforts. Like our efforts with the City of Napa, **for 2014, we will focus on implementation of a support plan to identify priorities and action items that align with SNC's existing and planned projects.**

City of St. Helena
In 2013, we worked with the City Council appointed St. Helena Climate Protection Task Force to develop a plan to reach our best energy upgrade opportunity targets based on GHG emissions data – specifically the hospitality industry and connecting them with PG&E resources (primarily LodgingSavers) to perform audits and save energy and money. **In 2014 we will continue this outreach. We will also be working with a local group of active and interested community members to explore the opportunity for neighborhood energy efficiency upgrades and group purchases of solar installations for homes.**

Articulating Napa County's Energy Vision
2014 will be largely focused on energy and related policies – and SNC will be embarking on the beginning of a collaborative effort with our partners in government, business, and leaders in the community to start to develop *Napa County's Energy Vision*. This effort will likely span more than one year and will frame the crucial questions and issues related to energy in our community so that the strategies we are developing and actions we are taking all support a broad, mutually agreed upon goal. Specifically – we will focus on current fossil fuel use; sources of renewables locally; identify roadblocks that exist (policy and regulatory issues, costs, technology uncertainties); examine current tools and evaluate how well they eliminate the roadblocks; start a list of co-benefits and any disadvantages for each approach such as: GHG reduction, job creation, reduced energy costs, complex infrastructure, costly startup, risk of operational failure; and ultimately - see if something emerges as the clear winner for all stakeholders in the County to support, or possibly a mix of strategies that get us where we want to be.

To support this broad effort - in 2014 we will use our Napa County Energy Watch "**Strategic Energy Resources**" funds (specifically focused on climate action planning) to work on a **countywide coordinated plan for climate action**. This is a natural next step from the outcomes of our 2013 Policymakers Summit and will:

- Create an understanding of the perceptions of key staff and elected officials in the County's six jurisdictions about energy and climate action
- Provide a simple inventory and summary analysis of existing energy efficiency and energy related climate planning efforts and policies in each jurisdiction in Napa County
- Determine current progress toward reduction goals, success stories, and complementary policies
- Identify common areas for improvement, gaps, and any conflicts in policies
- Develop projections for reaching reduction goals based on coordinated effort
- Outline opportunities for collaboration and leveraging of information and financial resources
- Outline and prioritize implementation strategies and actions
- Develop a jurisdiction driven evaluation program

As a complement to a coordinated climate and energy strategy in 2014 - SNC received a $25,000 grant from the Community Programs division of PG&E to develop a clear and concise **communications strategy** and launch a **climate action community engagement campaign** in Napa County. This campaign will support policies and strategies already developed and those in

development, enabling and strengthening community understanding, support, acceptance, and action over time. Goals include:

- Expand the issue beyond environmental concerns by emphasizing broader and more concrete examples of economic and community benefits of taking action – including market based solutions and public health.
- Clear up misconceptions and fill in basic knowledge gaps. Translate unfamiliar ideas into terms that are easy to understand and apply.
- Translate and test strategies and programs locally to increase knowledge, comfort level, and acceptance of broader climate action and GHG reduction efforts.
- Use current and relevant context to develop lasting support for climate action strategies by connecting the issue to personal identities and build lasting support.
- Balance discussions of problems and impacts with a clear outline of the solutions and actions we can take.

Property Assessed Clean Energy (PACE)
In 2014 we will work with the County of Napa on the launch of a commercial PACE program – scheduled in the spring. We are also working with the County to bring California HERO – a turnkey **PACE for residential** program developed by the Western Riverside Council of Governments and available statewide to our communities. This *voluntary* program will allow financing of energy efficiency, renewable energy, and water conservation measures on property tax bills at a low interest rate, payable over up to 20 years. The County and each of the cities have passed the necessary resolutions to opt into this statewide program and it will be available to the entire county. Not only will this increase energy efficiency and renewable energy, but will help put contractors and those in the construction and building trades to work.

Napa County Carbon Reserve
In 2014, SNC will develop a voluntary, incentive based Napa County Carbon Reserve program for non-regulated businesses, events, and activities. This will allow for donations through SNC and the collected funds will be used for GHG emission reduction efforts like waste to energy projects, energy efficiency for nonprofits and schools, electric vehicle infrastructure and more. During the last quarter of 2013 we researched and reviewed firms that may help us develop the program elements and process. We received recommendations from both the Climate Action Reserve and The Climate Registry and have received one proposal from a Bay Area firm so far.

Economic Development and Vitality

Napa County Business Incubator
SNC is represented on the Board of the Napa County Business Incubator and in 2013, the feasibility study and business plan for the incubator was completed with funding from the City of American Canyon, the City of Napa, the County of Napa, and Napa-Lake Workforce Investment Board (WIB). The plan outlines strategies for launching the start up business incubator in Napa County and **identifies a focus on wine and specialty food innovation and on clean and renewable technology - all building on the Napa Valley brand**. A report from the Board of Supervisors appointed Airport Industrial Area Blue Ribbon Committee identified a business Incubator as a strategy to help revitalize the south county area. A local start up business incubator **could lead to potential growth of new companies in available commercial space, and diversify and enhance our local economy.**

Napa Lake Workforce Investment Board (WIB)
SNC CEO is Chair of WIB - appointed by Board of Supervisors. The WIB oversees local workforce development activities and establishes programs and services in response to the workforce needs of our area. Our programs and services are **designed to serve employers, employees, job seekers and youth**. The WIB is committed to establishing a comprehensive, demand-driven workforce development system to serve both employers and job seekers.
For 2014, SNC and the WIB will be working on two programs and partnering to implement them:

- Based on the **Youth Ecology Corp** program in Marin County and Sonoma County we will build a similar program in Napa County and expand it to include a **new training program for adults and youth in our community focusing on clean and green energy, energy efficiency, and energy auditing**. Partners include WIB, SNC, Chamber of Commerce, Napa Valley College, and VOICES – On The Move.
- As part of our expansion of direct (low tech/high touch) outreach to customers – especially small and medium sized businesses - we will **explore a partnership with WIB on youth and workforce development, putting in place our long standing idea of an energy manager circuit rider.**

Communications and Partnerships

SNC Report to the Community

In 2013, we released our first ever Report to the Community – to share information about SNC's formation, programs, initiatives, and role in our community. The Report is in both print and electronic format and was sent via email and to over 1,200 local elected, business, and community leaders as well as SNC newsletter subscribers. It is also available via the SNC website.

Video Storytelling Project

In 2013, we launched the SNC **video storytelling project** organized into six 2-3 minute "chapters" that can stand-alone or be used together in a full-length 12-minute segment. Chapters include:

1. **The history and local influence of the Gasser Foundation**
2. **The origins of Sustainable Napa County, who we are and what we do**
3. **Economy**
4. **Environment**
5. **Engagement/Equity**
6. **Education**

Interviews with representatives from Gasser, SNC Board members, local governmental and community partners, nonprofits and businesses are featured in the video chapters and help tell our story in an engaging, personal way. The completed videos are posted on YouTube and were released throughout 2013 and used online (website and Facebook page) as well as through our nonprofit and community partners and affiliates. **In 2014 we will continue to use these timely videos in presentations and outreach, and will consider an updated segment or segments so current accomplishments and initiatives are highlighted.**

SNC E-News

In July 2013, SNC launched our first regular monthly e-newsletter as part of our broader communications plan. The e-newsletters are delivered to SNC subscribers (approximately 800) and community leaders. Goals are to inform and build recognition of SNC and our brand – positioning us as a resource on issues as well as to drive visitation to website and Facebook page. Each issue of E-news includes a themed feature article (energy efficiency, renewables, recycling and diversion, climate action) as well as a legislative update, a nonprofit or business partner profile, local events, and resources for information or assistance. **In 2014, we will continue the monthly E-News format, and expand it reach to include "roving reporters" in each community and "special correspondents" from allied organizations and nonprofits. We will also be pitching local monthly print publications (Napa Valley Marketplace, Napa Valley Life) to run newsletter features and as a result, extend our reach and readership.**

Napa Recycling and Waste Services

We continue a **corporate partnership** with NRWS who directs $10,000 of their community donation budget to SNC to support the work we do in the areas of recycling and waste diversion efforts, product stewardship, and education and outreach. **In 2014 we will be focused on waste to energy projects and initiatives.**

Community Organizations and Outreach

SNC CEO serves on the Board of Directors of the **Napa Chamber of Commerce**, as well as the Legislative Action Committee, and helps to connect the business community and Chamber members with SNC driven programs and initiatives, as well as sustainability issues in general. SNC participated in the development of the **2014 issues priority list** for the Napa Chamber which included the Napa County Climate Action plan, energy and CCA, workforce development, plastic bag ordinance, and the cumulative benefits/impacts of the variety of affordable housing and housing projects coming online.

SNC is a member of the **Napa County Coalition of Nonprofits,** which offers access to the network of local nonprofit leaders and free professional development and organization resources. In June, SNC made a presentation to approximately 50 attendees to share information about our nonprofit energy efficiency program and reserve fund grants; Energy Watch; programs for low income clients and more about SNC, who we are, what we do, and our role in the community.

SNC is a **co-sponsor of Leadership Napa Valley Planning Day** and helps coordinate that day's curriculum and program – working with county and city planning staff and weaving in information about energy and the economy into the program and topics.

SNC was featured in a lengthy article in the September issue of North Bay Biz magazine. The piece was well written and almost entirely about our organization and how we approach our work, as well as our role in the community.

Branding SNC and Fund Development

In 2014, SNC will continue our focus on communications and outreach about the organization, with specific attention to our "brand." The 2013 Board of Directors planning session will focus solely on this topic to help develop and articulate SNC's brand and how we manage and enhance it so our programs are even more effective and our position in the community is strong and clear.

> *"Brand is more than your logo or name. It's what differentiates your organization from the countless others the public can choose to support, instead of supporting yours. For nonprofits, strong brands are authentic and aspirational. When it's done right, branding helps nonprofit leaders solidify relationships with current supporters, attract new ones, and align your team around a clear idea of what you stand for."*

This branding work will allow us to expand our fund development efforts - and reach out to potential strategic funding partners (using our partnership with Napa Recycling and Waste Services as a model) and other sources of support like Community Reinvestment Act dollars available through local banks, grants and funding from governmental agencies, private organizations, and to affiliate with potential partners.

Contact us!

Give us a call or send us an email if you have thoughts, ideas, and comments or want to share some news...

Jeri Gill – Jeri@SustainableNapaCounty.org
Sally Seymour – Sally@SustainableNapaCounty.org or SallySeymour@mac.com
Bill Bennett – Bill@SustainableNapaCounty.org
Phone number: 707-927-3858 Website: www.SustainableNapaCounty.org
Facebook: Sustainable Napa County ("Like" us! "Friend" us!)

SNC Board of Directors

Waste Sector
Napa County Climate Action Plan 2013

Presented by

NAPA RECYCLING & WASTE SERVICES

UPPER VALLEY DISPOSAL RECYCLING (707) 963-7988

September 17, 2013

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EXECUTIVE SUMMARY

AB 32, The Global Warming Solutions Act of 2006, established a goal of reducing greenhouse gases (GHG) to 1990 levels by 2020, and directed the California Air Resources Board (CARB) to develop a Scoping Plan to meet this goal. The Scoping Plan detailed many measures to help the state meet the AB 32 objectives, and established that GHGs can be significantly reduced through recycling, composting and other waste diversion programs. In response to the Scoping Plan, Napa County (County) is working to complete a Climate Action Plan (CAP) which will identify baseline greenhouse gas (GHG) emissions from 2005, update current year emissions (2012) and project future emissions to 2020. This CAP will assist the County in determining how emissions would increase under a business as usual scenario, where no efforts are made to mitigate GHG emissions.

Both Upper Valley Disposal Services (UVDS) and Napa County Recycling Waste Services (NCRWS) provide recycling and waste collection and processing services for Napa County. They have been integral participants in the County's efforts to divert materials away from landfills, expanding recycling and composting services and leading the jurisdiction to better waste management practices and higher recycling rates. With their successful diversion programs, and other operational enhancements, UVDS and NCRWS are essential to the success of the County's Climate Action Plan.

UVDS and NCRWS have calculated the avoided indirect emissions generated from landfill diversion activities for the baseline year (2005/2006), current year and projected 2020 emissions. Through this process goals have been outlined to assist the County in achieving higher diversion rates and increasing these avoided emissions. In addition, both UVDS and NCRWS are looking to technology to assist in landfill diversion of organics including gasification and anaerobic digestion. These technologies provide a higher and better use for organics by capturing the embodied energy in the material before utilizing the organic byproduct as a soil amendment.

By 2020, UVDS and NCRWS will avoid *103,862* metric tons of carbon equivalents for Napa County through waste diversion activities and compost application.

The companies will generate *638 kWh* of renewable electricity and offset *40,820 gallons* of diesel with renewable fuels.

INTRODUCTION

AB 32, The Global Warming Solutions Act of 2006, established a goal of reducing greenhouse gases (GHG) to 1990 levels by 2020, and directed the California Air Resources Board (CARB) to develop a Scoping Plan to meet this goal. The Scoping Plan detailed many measures to help the state meet the AB 32 objectives, and established that GHGs can be significantly reduced through recycling, composting and other waste diversion programs. In response, Napa County (County) is working to complete a Climate Action Plan (CAP) which will identify baseline greenhouse gas (GHG) emissions from 2005, update current year emissions (2012) and project future emissions to 2020. This CAP will assist the County in determining how emissions would increase under a business as usual scenario, where no efforts are made to mitigate GHG emissions. The CAP will identify any AB 32 early action items, and/or other programs included in the Scoping Plan, that will help reduce emissions in the County. Ultimately, the CAP will define how the County will meet the State GHG reduction goals of 20% by 2020 and 80% by 2050.

AB 32 Early Action Items

Nine discrete early action items were identified by CARB during development of the Scoping Plan. These items help to provide emissions reductions necessary in meeting the 2020 GHG reduction goal, ahead of the measures identified in the Scoping Plan. In Napa County, UVDS has satisfied an early action item, by operating a methane capture program at Clover Flat Landfill.

The County will be looking at four main sectors for emission reduction opportunities. They are:

1. Agriculture & Natural Resources
2. Buildings & Energy
3. Transportation & Land Use
4. Water & Waste

Both Upper Valley Disposal Services (UVDS) and County Recycling Waste Services (NCRWS) provide recycling and waste collection and processing services for Napa County. They have been integral participants in the County's efforts to divert materials away from landfills, expand recycling and composting services and in leading the jurisdiction to better waste management practices and higher recycling rates. With their successful diversion programs, and other operational enhancements, UVDS and NCRWS are essential to the success of the County's Climate Action Plan.

NET ZERO EMISSIONS

CARB has released draft measures to help the State achieve greenhouse gas (GHG) reduction targets beyond 2020; which is an 80% reduction of 2005 levels by 2050. The Waste Sector has been included, and once again recognized for their important role in assisting the State in meeting their objectives. This scoping plan has set a goal for the Waste Sector to achieve "Net Zero" emissions by 2035. Net Zero means the total operational GHG emissions and the total avoided GHG emissions would equal zero.

Net-Zero is

Total Direct GHG from Operations – Avoided GHG from Landfill Diversion Activities

= 0

Avoided Emissions vs. Generated Emissions

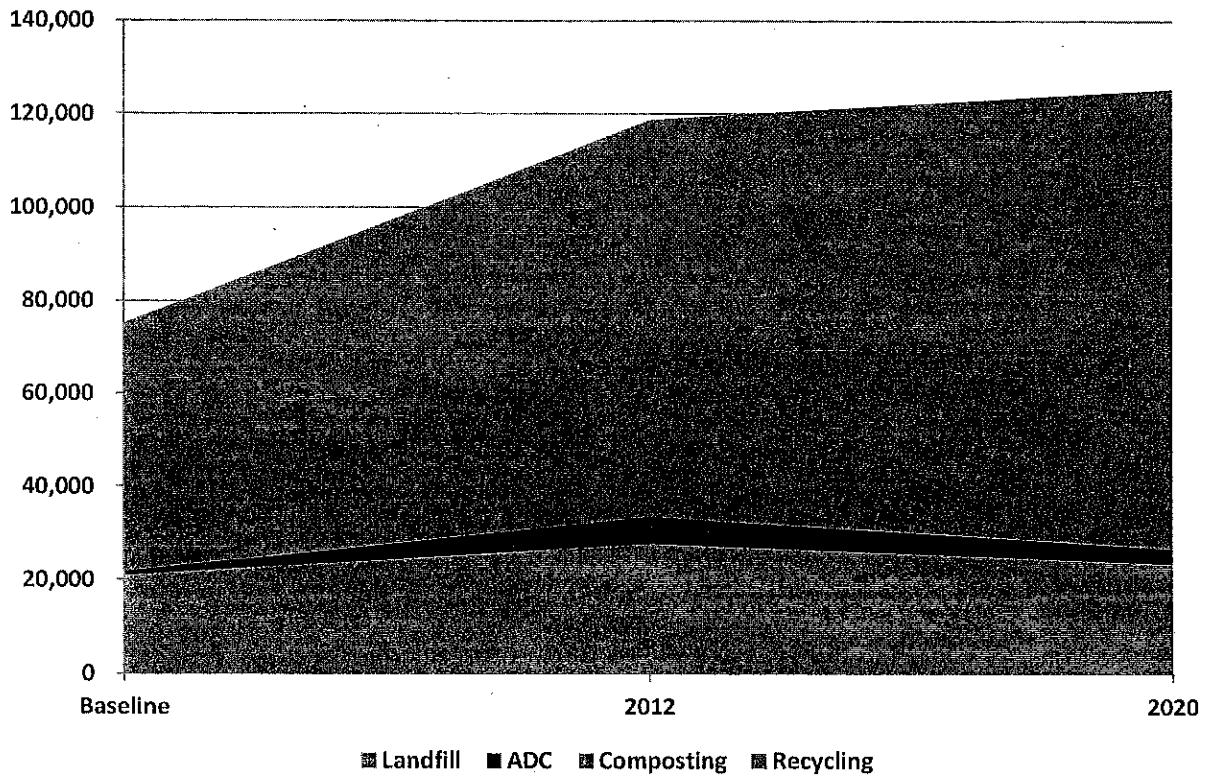
Avoided emission calculations assign a negative number to avoided emissions, such as fossil fuel emissions that are offset by biomass energy generation or soil carbon storage from compost use. Emissions that enter the atmosphere are given a positive number, such as transportation fuel combustion or fugitive landfill methane. Therefore, the net result may be either positive or negative depending on whether the total avoided emissions are greater or less than the total generated emissions. In this report, avoided emissions are presented in parentheses.

WASTE RELATED GOALS FOR NAPA COUNTY

In response to the County's desire to reduce emissions through the Waste Sector, UVDS and NCRWS conducted an assessment of the baseline, current year and projected waste scenario. This assessment provides an overview of how tons may change by 2020, and the avoided emissions possible by increasing recycling and composting activities.

The graph below provides a visual description of how the total waste has increased and changed in composition since the baseline year[1]. Recycling and composting programs have expanded as total waste tons have increased since the baseline. Projecting to 2020, we expect these programs to further increase, resulting in a decrease of total landfilled tons and tonnage used as alternative daily cover (ADC).

GRAPH 1. CHANGE IN TOTAL WASTE; BASELINE, 2012 & 2020



Using the projected tonnage we are able to project the increase in avoided indirect emissions generated from recycling, composting and avoiding landfill disposal. Table 1 below shows how the tons have changed from the baseline to present day, and how they may change by 2020. As expected, the more materials recycled, composted and diverted from landfill, the greater the avoided emissions are. It is important to note that there is not a direct line relationship between tons and avoided emissions. That

[1] This is the total County waste combined for UVDS and NCRWS. Baseline year represents the 2005 data for UVDS and 2006 data for NCRWS.

is because some materials provide a greater climate impact when avoided from landfills. For example, concrete provides less avoided emissions than comparable tons of aluminum.

TABLE 1. TOTAL TONS AND AVOIDED EMISSIONS FOR NAPA COUNTY

	Baseline		2012		2020	
	Tons	Avoided CO2e	Tons	Avoided CO2e	Tons	Avoided CO2e
Recycling	23,287	(36,290)	49,554	(44,257)	56,101	(64,380)
Composting	30,142	(19,294)	35,699	(22,326)	42,776	(23,472)
ADC	904	36	5,712	11	3,246	118
Landfill	20,898	3,608	27,850	4,771	23,368	4,000
Total	**75,231**	**(51,940)**	**118,814**	**(61,801)**	**125,491**	**(83,733)**

Combined NCRWS and UVDS will help Napa County avoid 83,733 metric tons of carbon dioxide equivalent emissions (mt CO_2e) through these waste diversion activities.

In addition to removing materials from landfill and sending them for recycling, both UVDS and NCRWS also create compost from green waste and food waste. When compost is applied to soils it results in an increase in soil health and improved plant productivity, increases the long-term carbon storage of soils and reduces the need for water, pesticides, herbicides and fertilizers required to maintain soils and grow plants and crops. These attributes represent a reduction in GHG emissions because of the use of compost. Using an emissions study published by CARB on compost, it can be estimated that by 2020, the application of compost results in an ***additional reduction in GHG emissions of 20,129 mt CO_2e***.

New technologies will be utilized to assist in diversion activities in 2020. These include building gasification plants[2] that will convert woody biomass to energy at Clover Flat Landfill and Napa Materials Diversion Facility (MDF) and a dry anaerobic digestion[3] facility at the Napa MDF to process food and green waste into energy used to fill collection trucks, before being sent to compost. These programs are necessary to use organics to a higher better use, and to assist in managing the increasing tonnage. From the Napa County tonnage, ***the gasification plant will produce 5,585 MWh of electricity, avoiding 1,587 mt CO_2e and sequester 9,178 mt CO_2*** in the form of biochar (included in the table above). The anaerobic digestion facility will help to offset the fuel emissions of 8 collection trucks for NCRWS. This will ***reduce fleet emissions by 605 mt CO_2e***, or 92.6%, where 8 trucks will be powered on biogenic compressed natural gas and 2 trucks will remain diesel.

By 2020, UVDS and NCRWS will avoid *103,862* metric tons of carbon equivalents for Napa County through waste diversion activities and compost application.

The companies will generate *5,585 MWh* of renewable electricity and offset *40,820 gallons* of diesel with renewable fuels.

[2] More information on gasification technology is provided on page 11.
[3] More information on anaerobic digestion technology is provided on page 17.

The following goals have been identified which will assist UVDS and NCRWS in achieving these avoided emissions.

Nine goals have been highlighted to help Napa County divert additional materials away from landfills. UVDS and NCRWS are looking forward to aiding the implementation of these programs with assistance from the County.

Northern Napa County Waste Diversion Goals

Goal 1: Expand the food waste program to include more commercial businesses and residential customers.

Goal 2: Build a biomass gasification plant at Clover Flat Resource Recovery Park to generate renewable energy from wood waste.

Goal 3: Full implementation and expansion of recycled materials collected through Mandatory Commercial Recycling.

Goal 4: Encourage better material management of vineyard waste by sending these materials to gasification and compost.

Southern Napa County Waste Diversion Goals

Goal 1: Expand the residential and commercial food waste programs to include more commercial businesses and gain better participation of residences.

Goal 2: Build a dry anaerobic digestion facility and gasification plant at the Napa MDF to turn organics into energy before being sent to compost.

Goal 3: Increase the participation of commercial recycling by 7%.

Goal 4: Encourage better material management of vineyard waste by sending these materials to gasification and compost.

Goal 5: Divert 90% of County tons away from landfill.

In Napa County, UVDS and NCRWS have implemented recycling and compost programs that are propelling the County towards their GHG reduction targets. Furthermore, they are looking towards new technologies to propel them towards even higher recycling and renewable energy goals.

EMISSION CALCULATION METHODOLOGIES

AVOIDED EMISSIONS

GREENHOUSE GAS ESTIMATION METHODOLOGY

Greenhouse gas emissions, both generated and avoided emissions, are estimated using two sources: 1) the U.S. EPA WARM model, and 2) California Air Resources Board-developed emission reduction factors for recyclables and compost. Both of these sources use a life-cycle approach.

US EPA WARM MODEL

The US EPA's Waste Reduction Model (WARM) was developed to help solid waste managers evaluate management options with respect to their GHG emissions impact. WARM calculates the emissions impacts of several waste management options (landfill, recycling, composting, and combustion with energy recovery) for 34 separate categories of waste material. The WARM emission factors are based on an EPA study entitled "Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks", originally published in 2002 and now in its 13th edition released in February 2012. The model uses a life-cycle analysis approach that considers emissions associated with acquisition of raw materials, emissions during the manufacturing process, and transportation emissions. GHG emissions reductions are calculated by comparing the emissions from an alternative Scenario with the emissions associated with the baseline Scenario. In this way, the reduction in GHG emissions from increasing the recycling rates of various commodities can be estimated.

CALIFORNIA AIR RESOURCES BOARD EMISSION REDUCTION FACTORS

The California Air resources Board prepared two documents presenting the development of GHG emission reduction factors, one for compost and the other for recyclables.

Compost:

CARB uses a life-cycle method to quantify the California-specific greenhouse gas emission reductions from using compost and the greenhouse gas emissions associated with compost management. Compost application to agricultural fields increases soil health while providing multiple co-benefits. Compost application reduces the amount of synthetic fertilizer needed, reduces the amount of water used, decreases soil erosion, increases soil carbon storage and reduces the use of herbicides. Composting material also causes greenhouse gas emissions during the collection of the initial feedstock and delivery of the compost, the use of energy and water to manage the compost pile, and as microorganisms convert the initial feedstock to compost. It is generally accepted that methane and nitrous oxide emissions are generated during composting; however, WARM does not include these emissions but CARB does, for the specific case of open windrow composting. The CARB method also includes GHG benefits from compost use that aren't considered in the WARM Model, which only included GHG benefits from soil carbon storage.

Recyclables:

CARB developed emission reduction factors to quantify the benefits associated with recycling. The life-cycle approach used in this method incorporates avoided emissions from manufacturing using

recyclables, the use of raw materials in the manufacturing process (i.e., harvested wood), transportation emissions, and recycling efficiency.

CALCULATION METHOD

Avoided emissions are calculated using WARM to estimate the avoided landfill emissions, where carbon storage is subtracted out (see below), and CARB is used to estimate avoided emissions of the beneficial re-use of materials. Where CARB does not have California specific emission factors, WARM is used. Total avoided emissions are the sum of avoided landfill emissions (with no carbon storage) and avoided emissions from the reuse of the materials.

Landfilling:

Since many organic materials do not completely decompose in landfills, some of the biogenic carbon is stored there; thus, WARM credits landfilling as a biogenic carbon sink for such materials. WARM provides an estimate of the amount of biogenic carbon stored through landfilling organic material. It then subtracts the amount of stored biogenic carbon in the landfill from the avoided emissions associated with recycling, composting or biomass energy generation, to arrive at a "net" GHG emission reduction relative to the landfill scenario, which favors landfill disposal. The biogenic carbon stored in the landfill is factored out in this analysis to arrive at emissions generated by the landfill.

COMPOST EMISSIONS

Applied compost can increase soil health while reducing the amount of fertilizer, water, herbicide usage and also decreases soil erosion and increases soil carbon storage. CARB has published a document that provides emission factors to determine the carbon savings from applying compost to soils. These emission factors are multiplied against the total tons of inbound compost material.

FUEL EMISSIONS

CARB has published fuel pathways detailing the carbon emissions for traditional on-road fuels, and alternative low carbon fuels. Using this document we can determine the emissions resulting from the transition of vehicles from diesel to lower carbon alternatives. Through this assessment CARB determined that CNG derived from dry anaerobic digestion has negative GHG emissions, i.e. more emissions are avoided through its use than are generated in its production. CARB has published the following emission factors for Diesel, compressed natural gas (CNG) and biogenic CNG (bioCNG).

Diesel- 94.7 g CO_2/MJ

CNG- 67.7 g CO_2/MJ

bioCNG- -15 g CO_2/MJ

In addition to the transition of diesel vehicles to low carbon alternatives, the emissions reduced by NCRWS switching landfills for waste disposal have also been taken into account. The Climate Registry (TCR) emission factors for diesel and heavy-duty diesel trucks were used to estimate these tailpipe emissions. It was assumed that the trucks had a fuel economy of 5.8 miles per gallon.

NORTH COUNTY- UPPER VALLEY DISPOSAL SERVICES

Upper Valley Disposal Service (UVDS), Upper Valley Recycling and Clover Flat Landfill/Resource Recovery Park (CFL) have been owned and operated by the Pestoni family for 50 years. For half a century they've served their community with a passion and commitment to environmental stewardship.. Founding partner, Bob Pestoni was a pioneer in the composting industry years before it was commonplace, developing systems for the local wine industry to deal with excess grape seeds, stems and skins all in an environmentally sensitive way. Today he is called a visionary for the systems he put in place, that have since served as models for the industry.

Next steps for the company include the development of a Resource Recovery Park at Clover Flat Landfill, where organic materials will be used to generate renewable energy. UVDS' focus is a continued partnership with the County of Napa, and the rural cities which reside in the service area by providing waste reduction, recycling, composting and reaching greenhouse gas emission goals for years to come.

UVDS tracks total tons managed by commodity type for all of the communities it services. In this report only tonnage pertaining to the County of Napa services have been included. Table 2 below summarizes the UVDS material description (found in their tracking sheets), how the materials are managed, and how they will be referenced within this report (Category Description.) Information was gathered to account for base year activities (2005) and present day (2012). Using this information and UVDS projected material management strategies, and population growth the 2020 projected tonnage scenario can be approximated.

TABLE 2. UVDS MATERIAL CATEGORY DESCRIPTION

UVDS Material Description	Management Scenario	Category Description
Solid Waste	Landfilled	Landfilled Waste
Pomace	Composted	Compost
Construction & Demolition Debris: Chips & Wood	Organics to Energy (70%) and Compost (30%)	Compost, Recycling
Construction & Demolition Debris: Fines & Inert	Beneficial Reuse and Alternative Daily Cover	ADC & Beneficial Reuse
Construction & Demolition Debris: PTW[4] & Trash	Landfilled	Landfilled Waste
Construction & Demolition Debris: All other categories	Recycled	Recycling
Green waste	Composted	Compost
Food Waste	Composted	Compost
Curbside: Trash-Baled	Landfilled	Landfilled Waste
Curbside: All other categories	Recycled	Recycling

[4] Pressure Treated Wood

UVDS Tonnage Summary

UVDS has seen a large increase in the number of tons managed at their facility from 2005 to 2020 (74%), despite a decrease in the area's population. Through new diversion programs, UVDS has brought more tonnage into the facility, while maintaining a high diversion rate. Most notably, there has been an increase in organics collection through the implementation of a new food waste program and a higher rate of construction and demolition debris recycling. Table 3 below summarizes total County tons managed at UVDS and the avoided emissions generated from recycling and composting activities.

Table 3. Summary of UVDS 2005 & 2012 Tons

	2005		2012	
	Tons	Total Avoided mt CO_2e	Tons	Total Avoided mt CO_2e
Recycled and Biomass to Energy	8,649	(17,542)	19,328	(25,438)
Composted	19,414	(13,027)	23,411	(15,761)
ADC and Beneficial Reuse	0	0	5,055	(13)
Landfilled Waste	10,853	1,853	19,757	3,373
Total	**38,916**	**(28,717)**	**67,551**	**(37,814)**

Through an increase in tonnage managed, and an increase in waste diversion activities avoided, emissions have increased to almost 10,000 mt CO2e per year from the baseline 2005 to 2012. The largest category for avoided emissions and the largest increase in avoided emissions has been from the Recycled and Biomass to Energy category, as a result of the new C&D recycling program. It is important to note that there is not a direct line relationship between tons and avoided emissions. That is because some materials provide a greater climate impact when avoided from landfills. For example, concrete provides less avoided emissions than comparable tons of aluminum.

By projecting tons managed UVDS can assist how to best manage tons and estimate the total avoided emissions that can be generated from these landfill diversion activities.

North County Projection Assumptions

The County of Napa has updated their population projections in an effort to update their GHG projections for their CAP. Based on these updates, it has been determined that the County's population will increase by 4.91% over 8 years to 2020. In addition, it is assumed that a goal of the County of Napa will be to exceed the California State Recycling goal of 75% by 2020.

Tonnage Assumptions

We have outlined 13 assumptions to guide the 2020 projections. Some of these assumptions will be realized as a part of UVDS' current business goals, while others we hope to achieve through a partnership with the county and increased landfill diversion.

Biomass Gasification

Organic matter can be processed by gasification, where it is heated to a very high temperature in a very low oxygen environment. Through this gasification process, syngas, which can be combusted for renewable energy, and biochar, which is used as a soil amendment, are created. This technology provides an environmentally friendly way of dealing with woody biomass to avoid landfilling, produce energy and a high quality amendment to enhance the health of soils.

1) The green waste tonnage collected will increase as the population increases.

2) Pomace tonnage sent to compost will remain the same.

3) Vineyards located in the County of Napa will begin diverting vineyard replanting waste to compost and gasification.

4) The Pilot food waste program should expand through a County incentive, such as an ordinance, to encourage more businesses to reduce organic waste sent to landfills. In addition, the awareness of self haul food waste composting program should be expanded.

5) Food waste collection should expand to include residential households.

6) Construction and Demolition recycling tons will grow with population.

7) 100% of the current material sent to biomass to energy will be diverted to the Clover Flat Resource Recovery Park Gasification Plant, and increase as population increases.

8) The Organic fraction (assumed to be half) of ADC will be diverted 50/50 to Compost and Gasification and will increase with population.

9) Inert half of ADC will grow with population.

10) Additional gasification tonnage will come from removed vineyard material and through increased diversion from the current solid waste stream

11) Curbside recycling tonnage will grow with population

12) Mandatory Commercial Recycling will divert an additional 300 tons from the solid waste stream.

13) Solid Waste will be reduced by; a) expanded food waste programs, b) increased gasification tons, and c) expanded Mandatory Commercial Recycling.

Northern Napa County Waste Diversion Goals

Four goals have been highlighted to help Northern Napa County divert additional materials away from landfills. UVDS is looking forward to aiding in the implementation of these programs with assistance from the County.

Goal 1: Expand the food waste program to include more commercial businesses and residential customers.

Goal 2 Build a biomass gasification plant at Clover Flat Resource Recovery Park to generate renewable energy from wood waste.

Goal 3: Full implementation and expansion of recycled materials collected through Mandatory Commercial Recycling.

Goal 4: Encourage better material management of vineyard waste by sending these materials to gasification and compost.

With these projections we can estimate the total avoided emissions from these diversion activities, and the instillation of the gasification project at Clover Flat Landfill.

TABLE 4. SUMMARY OF UVDS TONS, 2005, 2012 & 2020

	2005		2012		2020	
	Tons	Total Avoided	Tons	Total Avoided	Tons	Total Avoided
Recycled and Biomass to Energy	8,649	(17,542)	19,328	(25,438)	22,661	(35,506)
Composted	19,414	(13,027)	23,411	(15,761)	28,575	(16,533)
ADC and Beneficial Reuse	0	0	5,055	(13)	2,501	90
Landfilled Waste	10,853	1,853	19,757	3,373	18,078	3,086
Total	**38,916**	**(28,717)**	**67,551**	**(37,814)**	**71,814**	**(48,863)**

Total tonnage for the facility will increase by approximately 6.31%, with the increase in the County's population and new tons from vineyards. The overall County tonnage recycling rate will increase from 71% in 2012, to almost 75% in 2020. With the increases in recycling rates, and the installation of the gasification plant, the avoided emissions from these activities will increase from 37,814 to 48,863, or an additional 11,049 mt CO_2e avoided every year. It is important to note that there is not a direct line relationship between tons and avoided emissions. That is because some materials provide a greater climate impact when avoided from landfills. For example, concrete provides less avoided emissions than comparable tons of aluminum.

In addition to these avoided emissions from recycling, the application of compost provides downstream GHG benefits by reducing the need for water, fertilizer, herbicides and pesticides, and increases the long-term carbon storage of soils. Through UVDS' programs compost is provided and applied to landscape and agriculture soils in the region. Based on the projected composted tonnage, the application of finished compost in 2020 by local farmers will help to avoid an additional 15,431 metric tons of GHG emissions.

UVDS will be able to avoid a total of 64,294 metric tons of carbon dioxide equivalent emissions through the implementation of Northern Napa County Waste Reduction Goals by 2020.

UVDS Operational Updates

UVDS is planning to reinvent Clover Flat Landfill to assist the community with achieving new mandates and emerging legislation, by becoming the ***Clover Flat Resource Recovery Park.*** This effort will shift the focus away from being a landfill, and instead advance recycling and composting activities. Already, Clover Flat Landfill has instituted AB 32 early action items to collect landfill gas and convert it to energy. The Recovery Park will produce renewable energy from woody biomass and return landscape materials and commodities derived from recyclable material back to the community for sustainable business practices.

Goals of the new Resource Recovery Park:

- Extend the estimated closure date of the Landfill from 2021 to 2044, due to increased recycling, increased compaction, and the use of synthetic tarps as alternative daily cover.
- Add a 1 mega-watt biomass conversion facility that uses clean processed wood waste in a gasification unit.
- Increase in-vessel food waste composting operations and food waste transfer and processing operations.
- Increase the storage of recyclable materials.
- Add a series of commodity bunkers for wood chips, compost, top soil blends, aggregate materials, and landscape materials for the general public to purchase recyclable materials.
- Add a residential food waste drop-off at Recycling Operations area.
- Allow new inert alternative daily cover (ADC) material.

UVDS is also planning to expand the generation of renewable energy by installing roof top solar at their facility within the next 3-5 years. The solar panels will provide energy to our operations, offsetting Grid electricity and GHG emissions associated with our operations.

UVDS strives to implement environmentally preferable business practices throughout their operations. This includes maintaining an efficient fleet, in order to reduce local air pollutants and GHG emissions. UVDS continually looks for ways to improve its operations to reduce the negative impacts on the environment and the community.

SOUTHERN NAPA COUNTY- NAPA COUNTY RECYCLING AND WASTE SERVICES

Napa County Recycling and Waste Services (NCRWS) is a full service materials management company, with parent companies that have served the Napa County region for over a century. NCRWS provides the southern unincorporated Napa County with efficient, economical and sustainable recycling, composting and waste services.

Napa Recycling & Waste Services operates the Napa Material Diversion Facility (MDF), which includes a material recovery facility (MRF) that processes single stream recycling, source-separated recyclables and diverts other items, such as e-waste. There is also an on-site composting facility where greenwaste is converted into high quality organic compost materials that can be used for landscaping and agriculture. NCRWS brings collected recyclable and compostable material to the Napa MDF. An affiliate to NCRWS, Northern Recycling Operations and Waste Services, operates the adjacent Devlin Road Transfer Station, which accepts multiple types of materials, including solid waste, mixed C&D, bulky items, tires, clean dirt, and recyclables through the buyback center.

TRANSPORTATION RELATED CARBON REDUCTIONS

NRWS will be able to provide additional GHG reductions related to transportation emissions from the efficient hauling of solid waste, and conversion of the collection fleet to low carbon alternatives. By utilizing a landfill that is closer to the Devlin Road Transfer Station NRWS has reduced the total amount of emissions produced from hauling solid waste. Materials are now taken to Potrero Hills Landfill in Pittsburg, compared to Keller Canyon Landfill in previous years. This switch saves ***416 mt of CO_2e annually***.

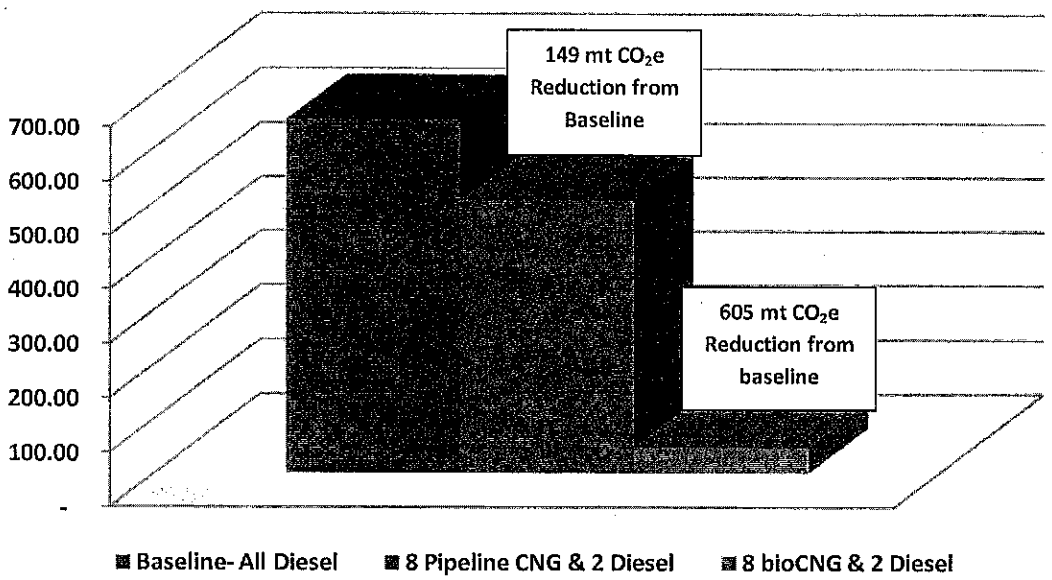
In addition, NRWS will find further GHG reductions associated with transportation emissions by utilizing the planned anaerobic digestion facility. The current fleet of diesel collection vehicles will be phased out and replaced with low carbon CNG. This will help our fleet reduce carbon emissions by up to 20% as compared to diesel. In addition, the anaerobic digestion facility will help to further offset emissions by producing a biogenic CNG, for which the life cycle impact is considered carbon negative[5]. Graph 2 provides a visual description of the reduced GHG footprint we expect for the conversion of our fleet. From the conversion of diesel to CNG ***149 mt CO_2e*** will be reduced. By converting all eight of the CNG vehicles to biogenic CNG ***605 mt CO_2e*** will be reduced. These emissions reductions are in addition to the avoided emissions from the diversion of materials from landfills.

Dry Anaerobic Digestion

Anaerobic Digestion is a natural process in which bacteria breaks down organic matter in an oxygen-free environment. Decomposition occurs in several stages and converts organic matter into a soil amendment and a combustible biogas which can be used for directly for heat and power generation, or in the case of NCRWS, cleaned and compressed into a renewable natural gas to be used as a vehicle fuel.

[5] The California Air Resources Board has published Life Cycle Assessments of fuel pathways as a part of their Low Carbon Fuel Standard. Based on their studies biogenic CNG produces -15 gCO_2e/MJ of fuel, compared to diesel at 94.7 gCO_2e/MJ of fuel.

GRAPH 2. GHG IMPACT OF NCRWS FUEL TRANSITION



AVOIDED EMISSIONS FROM MATERIALS MANAGEMENT

NCRWS tracks total materials managed for all of their collection services, including commercial, residential and roll-off. Using a material stream audit conducted for commercial and residential collection we were able to determine the approximate amount of materials recycled. Table 5 below provides a summary of NCRWS' material categories, how they are managed, and how the categories are named in this report.

TABLE 5. NCRWS MATERIAL CATEGORY DESCRIPTION

NCRWS Material Description	Management Scenario	Category Description
MSW (Residential, Commercial and Roll-off)	Landfilled	Landfilled Waste
Pomace	Cattle Feed & Composted (approx. 3%)	Compost and Cattle Feed
Yardwaste to Wood, Wood	Biomass to Energy	Recycled (Biomass to Energy)
Foodwaste, Yardwaste, Manure, Sawdust	Composted	Compost
Single Stream Recycling (Commercial & Residential)	Recycled	Recycled
Roll-off Single Stream Recycling, Source Separated Single Stream	Recycled	Recycled
Mixed C&D	Recycled & ADC	Mixed C&D Recycling and Landfill Beneficial

NCRWS Tonnage Summary

NCRWS has seen an increase of 41% in tons managed at the facility from 2005 to 2012, despite the decrease in the County's population. This is primarily from new programs that have encouraged more tons managed at the facility. The increase in tonnage has been in the MDF Recyclables category, which includes the entire single stream tons from residential, commercial and roll-off collection. In addition, the total amount of material landfilled has also decreased as programs have encouraged more diversion through recycling, composting and biomass to energy. Table 6 below provides a summary of County tons managed and the avoided emissions generated from each category from the 2006[6] baseline and current 2012 year.

Table 6. Summary of NCRWS Tons, 2005 & 2012

	2005		2012	
	Tons	Total Avoided	Tons	Total Avoided
MDF Recyclables (Residential, Commercial, Single Stream, C&D and Biomass to Energy)	11,886	(16,432)	28,962	(17,745)
Composted	7,383	(5,081)	6,799	(4,631)
Mixed C&D Recycling	2,753	(2,316)	1,264	(1,075)
Landfill Beneficial	904	36	656	24
Landfilled Waste	10,045	1,756	8,093	1,399
Cattle Feed	3,345	(1,185)	5,489	(1,934)
Total	**36,316**	**(23,223)**	**51,264**	**(23,962)**

By increasing the total amount of materials recycled and sent to biomass for energy, NCRWS has also increased the total avoided indirect emissions by avoiding landfill disposal and reducing the virgin materials required to manufacture new products. It is important to note that there is not a direct line relationship between tons and avoided emissions. That is because some materials provide a greater climate impact when avoided from landfills. For example, concrete provides less avoided emissions than comparable tons of aluminum.

By projecting tons managed NCRWS can assist in understanding how to best manage the materials and estimate the total avoided emissions that may be generated from these landfill diversion activities.

South Napa County Projection Assumptions

The County of Napa has updated their population projections in an effort to update their GHG projections for their CAP. Based on these updates, it has been determined that the County's population will increase 4.91% over 8 years by 2020. In addition, it is assumed that the County of Napa has a goal to exceed the California State Recycling goal of 75% by 2020.

[6] 2006 tons were used to establish a baseline because 2005 was a partial operational year.

Tonnage Assumptions

We have outlined 12 assumptions to guide the 2020 projections. Some of these assumptions will be realized as a part of NCRWS' current business goals, while others we hope to achieve through a partnership with the County and increased landfill diversion

1) Residential recycling tons will increase with the County population increase.

2) Residential compost tons will increase in two different ways

    a) Food waste collection will grow to capture 80% of the total available tonnage (estimated to be 1,170 tons)

    b) Current yard waste collection will grow with population.

3) Residential solid waste will decline as food waste collection increases. The remaining tonnage will grow with population.

4) Vineyards located in the County of Napa will begin diverting vineyard replanting waste to compost and gasification.

5) Cattle feed (pomace) will remain the same.

6) Commercial food waste collection will double from the current 430 tons per year to 860 tons per year

7) Commercial recycling increases in two different ways

    a) As population increases the total tons collected will increase

    b) Through program expansion diversion will increase by an additional 7%

8) Commercial solid waste will be reduced by the expanded food waste and recycling programs; the remaining tonnage will grow by population.

9) All mixed Construction and Demolition (C&D) will grow with population, while the diversion remains the same.

10) All roll-off tonnage grows with population, while diversion remains the same.

11) A dry anaerobic digestion facility will be built on-site to convert organics to energy in the form of methane, before being sent to compost.

12) A gasification facility will be built on-site to convert woody biomass to energy in the form of syngas and biochar, a high quality soil amendment[7].

[7] For more information about gasification please refer to page 11.

13) Additional programs will be added and expanded to divert 90% of County tons through compost, gasification and additional recycling.

Southern Napa County Waste Diversion Goals

Five goals have been highlighted to help Southern Napa County divert additional materials away from landfills. NCRWS is looking forward to aiding in the implementation of these programs with assistance from the County.

Goal 1: Expand the residential and commercial food waste programs to include more commercial businesses and gain better participation of residences.

Goal 2: Build a dry anaerobic digestion facility and gasification plant at the Napa MDF to turn organics into energy before being sent to compost.

Goal 3: Increase the participation of commercial recycling by 7%.

Goal 4: Encourage better material management of vineyard waste by sending these materials to gasification and compost.

Goal 5: Divert 90% of County tonnage away from landfill.

Through these projections we can estimate the total avoided emissions from these diversion activities, the instillation of the gasification and anaerobic digestion facilities.

As seen in Table 7, Total tonnage for the facility will increase with the increase in the County's population, just under 5%. The overall County tonnage recycling rate will increase from 84% in 2012, to 90.1% in 2020. With the increases in recycling rates, and the installation of the gasification plant and the planned on-site anaerobic digestion facility, the avoided emissions from these activities will increase from 20,070 to 34,870, or an additional 10,909 mt CO_2e avoided every year.

TABLE 7. SUMMARY OF NCRWS TONS, 2005, 2012 & 2020

	2005		2012		2020	
	Tons	Total Avoided	Tons	Total Avoided	Tons	Total Avoided
MDF Recyclables (Residential, Commercial, Single Stream, C&D and Biomass to Energy)	11,886	(16,432)	28,962	(17,745)	32,115	(27,744)
Composted	7,383	(5,081)	6,799	(4,631)	8,701	(5,001)
Mixed C&D Recycling	2,753	(2,316)	1,264	(1,075)	1,326	(1,130)
Landfill Beneficial	904	36	656	24	745	28
Landfilled Waste	10,045	1,756	8,093	1,399	5,290	914
Cattle Feed	3,345	(1,185)	5,489	(1,934)	5,500	(1,938)
Total	**36,316**	**(23,223)**	**51,264**	**(23,962)**	**53,677**	**(34,870)**

It is important to note that there is not a direct line relationship between tons and avoided emissions. That is because some materials provide a greater climate impact when avoided from landfills. For example, concrete provides less avoided emissions than comparable tons of aluminum.

In addition to these avoided emissions from recycling, the application of compost provides downstream GHG benefits by reducing the need for water, fertilizer, herbicides and pesticides, and increases the long-term carbon storage of soils. Through NCRWS' programs compost is provided and applied to landscape and agriculture soils in the region. Based on the projected composted tonnage, the application of finished compost in 2020 by local farmers will help to avoid an additional 4,699 metric tons of GHG emissions.

NCRWS will be able to avoid a total of 39,569 metric tons of carbon dioxide equivalent emissions through waste reduction Goals in Southern Napa County Waste Reduction Goals are implemented by 2020.

NCRWS Operational Updates

NCRWS plans to implement several facility improvements in order to help the facility prepare for new State-wide and community recycling goals. By utilizing new technology NCRWS will be able to divert more tons away from landfills, put them to the highest and best use and reduce negative environmental impacts. NCRWS is currently planning to develop the following:

Anaerobic Digestion: An anaerobic digestion facility will process a mixture of food waste and green waste in a fully enclosed structure, and create a methane byproduct which will be cleaned and compressed to use as a biogenic compressed natural gas (CNG) in the waste and recycling collection vehicle fleet. The resulting organic material (digestate) will be further composted on-site to produce high quality finished compost for the community.

Gasification Plant: A biomass gasification power plant will use clean processed organic material to produce electricity and a soil amendment; biochar. The embodied energy of wood waste, agricultural crop residuals, bark, lawn, yard, and garden clipping and leaves, can all be harnessed, before the organics are sent to compost. This plant will help to offset the electricity requirements of the on-site operations, while also diverting organic materials from landfill.

Covered Composting: Covered composting provides a way to better manage blended food waste and green waste composting on-site since it reduces odors and provides an emissions control during the composting process with the use of biofilters.

Stormwater Treatment: NCRWS plans to install improved stormwater pollution prevention and treatment facilities with the goal of ensuring that all water leaving the site does not burden any municipal treatment centers.

Solar Panels: In addition to renewable fuels generated by the anaerobic digestion facility, NCRWS is planning to install solar panels on the roof of the Materials Diversion Facility building and shop building for on-site renewable electricity generation.

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Bio-Matt Belair

Matt Belair brings more than a decade of manufacturing experience to his role as Director of Technical Operations at Delicato Family Vineyards where, for the past five years, he has been instrumental in maintaining and improving the company's environmental responsibilities through environmental regulatory and compliance, as well as safety regulatory compliance and quality control.

As co-chair of the Wine Institute Technical Committee's Environmental Working Group, Matt support's the committee's mission of meeting the environmental needs of the industry.

A native of East Lyme, Connecticut, Matt graduated Magna Cum Laude with a BS in Chemical Engineering from Northeastern University in Boston.

Matt currently lives in Wilton, CA and, in his spare time, enjoys horseback riding, sports, history and natural science.

Delicato Family Vineyards

This year, Delicato Family Vineyards, one of the fastest growing wine companies in the country, celebrates 90 years of California winemaking and grape growing heritage. Family owned and operated since the company's founding in 1924, three generations of Indelicato family have fostered the winery's commitment to innovation, quality and environmental stewardship - cornerstones that have harnessed the family's long-term focus and solidified the winery as an internationally recognized leader in the industry. Under the leadership of CEO, Chris Indelicato, the winery harvests some of the most diverse and desirable vineyard estates across the top regions of California. Today, Delicato Family Vineyards farms 6,000 acres of vineyards including San Bernabe Vineyard in Monterey, one of California's oldest grape-growing regions; Clay Station, a remarkable vineyard property located in the rolling, sunny foothills in Lodi and Black Stallion Estate Winery in the Napa Valley along the famed Silverado Trail. As nearly a century's worth of hard work continues to flourish, Delicato Family Vineyards is steadfastly committed to producing and representing wines of the highest quality produced in accordance with sustainable winegrowing practices. The Delicato Family Vineyards growing portfolio of nationally distributed brands includes: Gnarly Head, HandCraft Artisan Collection, Noble Vines, Bota Box, Belle Ambiance, Irony, Brazin, Sequin, Fog Head, Massimo, Domino, Twisted, Black Stallion Estate Winery, Wolfgang Puck, La Merika, First Press, Sonoma Hills, and Frusion Wine, with plans to develop more brands in the future.

Sustainable Winegrowing Ecotourism & Promotion

Karissa Kruse

President, Sonoma County Winegrowers

Karissa Kruse is President of the Sonoma County Winegrowers, a non-profit marketing and educational organization dedicated to the promotion and preservation of Sonoma County as one of the world's premier grape growing regions. Karissa joined Sonoma County Winegrowers as Director of Marketing in September 2012 and was named President for the organization on May 1, 2013. Karissa earned a BS in Economics and an MBA in Marketing from Wharton School of Business at University of Pennsylvania. She has worked in various aspects of marketing, brand management and business development for companies such as General Mills, Universal Studios, Mattel and Dairy Management, where she worked for seven years on behalf of dairy farmers nationally. She is the owner of a 25 acre parcel in Bennett Valley, with five acres planted to grapes and is partner in a small winery, Argot Wines. Kruse is on the board of the Sonoma County Harvest Fair, Sonoma County Grape Growers Foundation, Sonoma County Tourism, Santa Rosa Chamber of Commerce, Santa Rosa Junior College Viticulture Advisory Committee and a member of Leadership Santa Rosa Class 29.

SONOMA COUNTY WINEGROWERS

Sonoma County Winegrowers Announces Karissa Kruse as New President

By Ginger Baker, March 5, 2013in Press Release

The Board of Directors of the Sonoma County Winegrowers (SCW) is pleased to announce that Karissa Kruse has accepted the position of President, replacing Nick Frey as he retires. Karissa will assume the role as of May 1, 2013. Nick will stay on in a reduced capacity through the end of 2013 to ensure a smooth transition and support Karissa and the Board as an advisor.

This promotion brings to completion an 18-month recruiting and succession planning process for the Sonoma County Winegrowers who recruited Karissa for the Marketing Director role in August of 2012. During the exhaustive search and her interview process, the Search Committee and the Board knew that they had found someone special who had the potential to replace Nick Frey. As Nick's retirement process began the Executive Committee and a 5-person task force interviewed Karissa as an internal candidate before making a decision to open the position broadly. With a unanimous recommendation to promote Karissa, the Board is confident that she is the right person to lead the grower community.

"Karissa's strong marketing background and ability to build relationships will help us maintain and grow the momentum that the Winegrowers have experienced over the past four years with the collaboration of the Sonoma County Tourism and Sonoma County Vintners." said John Balletto, Board Chair. "Nick has been an integral part of forging the path for growers for over 14 years and now we are ready for Karissa to evolve the organization and represent us moving forward."

In her short tenure as Marketing Director, Karissa has developed an 18-month strategic plan, undertook the leadership of a community outreach program, and has developed relationships with Sonoma County Tourism and Vintners and many in the growing community.

"Karissa has been a great addition to the Commission staff in just 6 months. She is quick to learn and motivated to represent growers' interests to the wine trade and local community," said Nick Frey. "Karissa's experience and energy are what is needed to continue moving the Commission to new heights."

Karissa comes to the SCW with an MBA in Marketing from Wharton School of Business and a BA in Economics from the same. She has worked for companies such as General Mills, Universal Studios and Dairy Management, in which she worked for 7 years on behalf of dairy farmers nationally. She is the owner of a 25 acre parcel in Bennett Valley, with 5 acres planted to grapes. Karissa understands the needs and concerns of growers, being one herself. Karissa brings a wealth of knowledge and energy to the position.

History and Philosophy

The Selland Group is a family owned and operated organization specializing in high-end, personalized, unforgettable dining experiences. For over 20 years, the Husband and Wife Chef team of Randall Selland and Nancy Zimmer, along with their grown children Tamera Baker and Josh Nelson, have left an indelible mark on the Sacramento dining scene with their trailblazing cuisine, elegant design aesthetic, faultless service, organic hospitality, and cutting-edge food philosophy.

The Selland Family were "locavores" long before it was hip to be so. They pioneered the use of locally grown, sustainable, organic ingredients and championed the principals of farm-to-table philosophy from the start. Always ahead of the pack throughout their 20-plus years in business, The Selland Group first began its culinary adventure with The Kitchen Catering, organizing lavish and legendary events throughout the region.

In 1991, they started throwing extravagant Demonstration Dinners in their catering cooking space. The prix fixe, multi-course 3-hour-plus affairs – part fine dining, part live theater, and part dinner party – were an instant hit. They featured Chefs Selland and Zimmer preparing entire meals, as well as the evening's entertainment, right in front of their guests. Their grown children, Baker and Nelson, provided service.

Demand for these Demonstration Dinners exploded, and The Kitchen became a local and regional sensation, with reservations nearly impossible to get for this ultimate and entirely original dining experience. Seventeen years later, The Kitchen now puts on their culinary events five nights per week to a packed house, serving seasonally inspired dishes made from the very best ingredients available in Northern California and around the world.

The Kitchen is still unduplicated. It has won numerous awards for food and service and has earned national acclaim for its outstanding wine list. In 2001, with The Kitchen ceasing full scale catering operations to focus on full-time

History and Philosophy

Demonstration Dinners, The Selland Group opened Selland's Market Café. The café, with its warm and elegant European feel and huge selection of de icious homemade entrees sides, sandwiches, salads, and pizzas, as well as a w ne shop and full service bakery, was a sensation, and remains a bustling and vibrant neighborhood gem at its East Sacramento location. Selland's is unmatched for top-quality casual cuisine available for dine-in or take-out.

September 2007 saw the latest success in the Selland Group Empire, with the debut of the urbane and sophisticated downtown hot spot, Ella Dining Room and Bar, which opened to instant rave reviews and international recognition for its inspired design. Ella brings effortless and elegant "rustic luxury" to downtown Sacramento, with a raw seafood and oyster bar, seasonal handcrafted cocktails, fresh and clean modern American cuisine made from top notch local and seasonal ingredients with an eye to small plates and community dining, and gorgeous award-winning design.

When you come to a Selland Group restaurant, you are family. We create dining experiences that bring together the best in quality, atmosphere, and the genuine hospitality and personal service that are the hallmarks of our family of restaurants -- The Kitchen, Selland's Market café, and Ella Dining Room and Bar. We love to make magic and memories. And we invite you to join us.

WENTE
VINEYARDS

AMY HOOPES
Chief Marketing Officer &
Executive Vice-President of Global Sales

As Executive Vice-President and Chief Marketing Officer of Wente Family Estates, Amy Hoopes oversees all global marketing and sales operations for the family-owned wine portfolio including Wente Vineyards, Entwine, Murrieta's Well, Double Decker, and Hayes Ranch, as well as for the lifestyle operations, The Course, The Restaurant and the Concerts at Wente Vineyards.

- *'I am focused on keeping our finger on the pulse of the consumer - in the market and in our lifestyle operations. That way we are be able to listen and engage in an ongoing conversation between the Wente Family and the consumer'*, Hoopes says.

By combining the sales and the marketing operations, Hoopes is heading a long-term brand driven sales strategy with the ultimate goal of positioning Wente Family Estates as the most respected family-owned winery in the world.

Hoopes joined Wente Family Estates in 2007 as Vice President of Marketing with the primary goal of streamlining the company's overall brand strategy and portfolio. Hoopes worked on the alignment of brand strategy and portfolio mapping, together with the managing Wente 4th and 5th family members. The project helped define the current positioning for each of the Wente Family's brands, map out possible gaps in the portfolio, and develop plans on how to fill those gaps where needed.

- *'I love working with the Wente family'*, Hoopes says, *'They are a diverse group, each with a specialty in the business. They all bring in energy and passion every day, which is very motivating and rewarding for me and the rest of the employees at Wente Family Estates'.*

After graduating from the University of Pennsylvania in 1997 with a degree in Anthropology, Amy joined E. & J. Gallo's Management Achievement Program and her last position after 10 years of diverse responsibilities was a Director of Marketing at E. & J. Gallo Winery. In this capacity, she oversaw marketing of the Value Wine Portfolio, as well as new product development and innovation for wines and spirits.

Hoopes is a member of the Communications Committee for Wine Institute, a Member for Monterey Winegrowers Association and an executive board member and secretary for Livermore Valley Winegrowers Association. Additionally, she is the Co-President and on the board of Les Dames d'Escoffier International (LDEI), San Francisco Chapter.

Hoopes lives in Pleasanton with her husband and two young daughters.

# # #

Updated Jan 2014

Articles of Interest

Western Farm Press

Respect for land sustains five-generation farming family

Mar 12, 2014 Greg Northcutt

The small, dryland farm they established near Acampo, Calif., in the 1870s to grow watermelons has continued to thrive and expand. Today, the fifth-generation family operation manages 8,000 acres of wine grapes in the Lodi and Clarksburg appellations. The grape-growing side of the business includes the family's vineyards and a vineyard management service that oversees the production and harvesting of wine grapes for other vineyard owners in San Joaquin, Sacramento, Yolo, and Solano counties.

The winemaking side features an energy-efficient, labor-saving, state-of-the art winery. There, the Langes crush about 20,000 tons of grapes each year, producing some 75,000 cases of wine for the family's case goods program including labels such as LangeTwins, Caricature, Nickname and Green Hills. The family also produces over 3 million gallons of wines for the bulk market and case good programs for various other wineries.

Brad and his twin brother, Randall, have been farming as partners since 1974. That's when they purchased a portion of the family land from their father, Harold, grandson of Johan and Maria. The two brothers have been directing the growth and operation of the LangeTwins family business ever since.

Their approach is based on respect for the land, responsible energy use and a desire to make authentic, high quality wines using environmentally-friendly farming and winemaking practices.

"Sustainable winegrowing is a way of life for our family," says Brad.

Those aren't just words, either. In fact, in 2006 the family's San Joaquin County farm was the first in California to earn the national Leopold Conservation Award, which honors private landowners for outstanding land stewardship.

Their resource-conserving practices include the use of neutron probes to monitor soil moisture levels regularly; custom-built electrostatic sprayers that cover four rows at once for more efficient use and application of materials while minimizing impact on the environment; and introducing and preserving native grasses and trees and installing nesting boxes for owls, birds, and bats to encourage the presence of wildlife and a healthier, more diverse and stable environment.

In the meantime, aided by Brad's wife, Susan, and Randall's wife, Charlene, the two brothers have also assumed another role. They're grooming the next generation of Langes to take over the farm, when that time comes. Their children – five in all between the two families – have returned to the farm after completing college. Each of them – Marissa, Aaron, Philip, Kendra and Joe – have specific responsibilities on the winery and viticulture teams.

KSBW

Drought impacts Monterey County winemakers

UPDATED 2:01 PM PST Feb 02, 2014

SALINAS VALLEY, Calif. —The statewide drought is beginning to have an impact on wine production around the state, including Monterey County.

During the winter months grape plants don't need much water but with current drought conditions, wine producers in the Salinas and Carmel valleys are starting to irrigate their crops earlier than usual.

John Boekenoogen of Boekenoogen Vineyards said the vineyard doesn't normally irrigate until June, but he's concerned about his water supply lasting.

"Water in our wells (is) quite a ways down so we have to be frugal with water this year," he said.

At Bernardus Winery in Carmel Valley, winemaker Dean DeKorth said the drought impact on his crop is minimal.

However, he said the warmer temperatures are causing vines to bud earlier this year, so they will prune a little later. "Our vineyard manager is going to be pruning later in the season this year to try and delay the whole bud break and whole growth cycle," said DeKorth.

The lack of rain is also making it difficult for the planting of new vines because they need more water for roots to establish in soil during the first two years. In response, some producers are choosing not to plant this year.

Many Monterey County winemakers said they are hoping for at least some rain and for another successful grape harvest season in 2014.

CBS Sacramento

Wineries Worry About California Drought's Impact On Grape Growers

January 30, 2014 11:00 PM

SACRAMENTO (CBS13) — California's drought has winemakers from across the state worried about how it will impact the industry.

Coming off consecutive record years for grape growers, another record could drastically impact how 2014 turns out.

Vineyards up and down the state haven't had this little rain in decades. It worries boutique winery owners like Sue Rueger from Calaveras County.

"As far as there not being enough grapes, because we are a small winery and there may not be enough to go around," she said.

That's also a worry for Tom Nye, who owns Blind Horse Winery in Wisconsin. He buys all of his grapes in California.

"What I am hearing is that less grapes, they will be more expensive," he said.

Nye is in Sacramento for the Unified Wine & Grape Symposium, and worries the drought could price him out.

"If that is the case, I am going to start to lock in orders on 2013 bulk wines to protect myself a little bit," he said.

Bogle Winery from Clarksburg crushes more grapes than anybody in the region. The Winery of The Year honoree at this year's symposium will likely look to the warehouse to make up for any shortcomings this fall.

"We had two long seasons in a row. [2012 and 2013] had pretty big crops so there is a lot of us sitting on pretty decent inventory," Eric Aafedt said.

While there may be fewer grapes, he says it doesn't necessarily mean a quality drop.

"Sometimes a shorter crop makes for a better wine. It just depends on the balance," he said.

But the quality will be jeopardized if it doesn't rain. Most worry the vines will begin to flower or bloom too early, which means the grapes would be lost.

"Once we have bud break, we are always worried about frost and if it happens real early we will have the rest of the winter to worry about frost damage," he said.

KCET

What the Drought Means for California Wine

by George Yatchisin
on January 29, 2014 12:35 PM

Earlier this month in Sacramento, Governor Brown issued an official drought declaration. In Sonoma, after last year's record dry year, some vineyards ponder whether it's better to lose this year's harvest by cutting all the fruit to save the vines themselves. In San Luis Obispo County, people have had to dig wells twice as deep, from 350 to 700 feet, to reach the once plenteous aquifer. Throughout the state, local governments are trying to establish new drought-related rules.

And in Santa Barbara County, winemakers and vineyard owners are wary, if not full-out worried. "It's truly too early to tell what the final outcome of the current conditions will be -- we still have a long way to go to get to harvest and a lot can happen from now to then," says Larry Schaffer, owner of and winemaker at Tercero Wines. "I'm already anticipating smaller crop levels this year than last, noting that we've had larger than normal crop levels the past two years."

Winemakers seems perhaps even more concerned for the 2015 growing season than this one, for as Matt Murphy, president of Presqu'ile Winery, says, "We are watching conditions in the vineyard closely but fortunately the Santa Maria Valley, at least for now, has a plentiful, easily accessible water supply. We do not expect to see any major impact to our ground water supply this year but prolonged drought over several years could obviously degrade our water table."

 drought, after all, isn't something that's too surprising in a Southern California that isn't particularly known for rain even in its wettest years. "We have been actively reducing water inputs to our vineyard blocks in an attempt to move away from a reliance on 'full season' irrigation," relates Matt Dees, winemaker at Jonata Wines. "In a potentially drought-ridden future California, a gradual movement towards dry farming vineyards is the only way to responsibly manage vines and promote a healthy and stable property. We will still need to rely on some help from Mother Nature in the form of winter rains. Without this help, we will eventually be crippled by salt damage and inhospitable soil conditions. If the drought turns out to be long term, it could affect future vineyard plantings by eliminating many potential vineyard sites due to a lack of stable and consistent water sources."

In the short term, the 2014 vintage might be trickier for a winemaker like Schaffer, who owns no vineyards, than it will for Murphy or Dees, who have estate fruit. "I am concerned because I purchase all of my fruit from different vineyards throughout Santa Barbara County," Schaffer points out. "Therefore, if a vineyard is adversely affected, I am bound to get less fruit than I am contracted for, and this will affect how much wine I am able to produce."

Less water can mean not as strong vines, so as Murphy explains it, "We will be keeping a close eye on vine vigor, cluster weights, and number of clusters per shoot. If necessary we will cluster thin and shoot thin to maintain appropriate vineyard balance if we see reduced vine vigor." And all that thinning of clusters and shoots mean grapes never even get a chance to grow, let alone end up in a bottle at your table.

Will that mean pricier bottles when the 2014 vintage hits the shelves (hello, Five-Buck Chuck)? "It's hard to say," Schaffer wonders. "We've had bumper crops these last two years but I'm not seeing any wineries rolling back prices because of increased volumes. If the economic climate for wine remains as strong as it has been recently, you may see select wineries increasing pricing to soften the blow of a lower volume of wine produced."

Wine Spectator

Is There Rain on the Horizon for California's Vineyards?

Posted: Jan 15, 2014 10:00am ET

California is thirsty—and not for wine. It barely rained in 2013, and the wine industry is worried.

How bad is it? Some of the growing regions in Napa Valley got less rain than Las Vegas. Paso Robles, on the California Central Coast, got 1.92 inches of rain in 2013 instead of the average 12.78, according to the National Weather Service. By comparison, Death Valley got 2.17 inches.

That makes 2013 the driest year on record in California, and the records go back to about 1880. Droughts are nothing new here, but this is a new level of parched. It doesn't help that 2012 was an exceptionally dry year as well.

What does that mean to wine? So far, growers and winemakers aren't feeling the pain, unless anxiety counts. The vines are dormant right now, so that's not an issue, but the seasons in California's winegrowing regions are quite distinct. Most of the annual rain comes in just four months: December through March.

Vineyard reservoirs are low and getting lower as growers make up for lost rain. "No one has enough water for frost protection," said Steve Dutton of Dutton Ranch, which farms 1,100 acres of vineyards in Sonoma County. Many growers use sprinkler systems against frost, spraying a protective coat of water on the vines.

Cover crops, which bring nutrients and trap moisture for the vines, are almost non-existent. Tegan Passalacqua, winemaker and vineyard manager of Turley Wine Cellars, farms Zinfandel and Petite Sirah around the state. Cover crops, which grow between the rows of his organic vineyards, typically have reached 18 inches by now, but most are 3 inches tall at best this year.

"I was driving around Paso Robles a few weeks ago and it looked like a desert there," Passalacqua said.

No one in the wine industry is panicking at this point. Vineyards don't need a lot of water to survive, although the lack of rain and continued sunny weather could eventually affect the crop. In dry years, budbreak typically comes early, which increases the risk of frost stunting the crop. "It's most likely going to be a smaller harvest," Passalacqua said. "After having big harvests two years in a row, the vineyards are exhausted."

Long-range forecasts suggest that February could finally bring rain, and some models suggest a rainy spring is ahead, but it's just too soon to tell. "If we can get 15 to 20 inches of rain by April 1, we'll be just fine," Dutton said. If not, "Well, it would be devastating."

For now, a lot of fingers are crossed in California wine country.

North Bay Business Journal

Drought could limit Napa Valley winegrape crop, growers say

By Jeff Quackenbush, Business Journal Staff Reporter

ST. HELENA — Napa Valley winegrape growers are drawing on a number of measures to limit water usage and protect vines that are beginning to bud more than a month early, as California's drought has turned normally wet, chilly winter days into a stretch of warm, dry days that could ultimately lead to a smaller 2014 crop, according to local industry experts.

Though showers are in the forecast later this week and into the next, growers of the highest-priced winegrapes are looking for rain — and a lot of it — in the next few months, Jennifer Putnam, executive director of Napa Valley Grapegrowers, said at a press conference in the 670-member trade association's St. Helena offices on Tuesday.

Southern Napa Valley should have received almost 15 inches so far in the July-to-June rain season, but the accumulation in that area was 2.98 inches, she said. The valley faced a similar drought situation four decades ago.

"If February and March were wet, we would be in a good position," she said. The valley would have to get 8 to 9 more inches of rain to get to that point.

A key challenge for winegrape growers in drought conditions is figuring out how much of the yet-to-be-seen crop can make it to harvest, given available water, according to Domenick Bianco of Renteria Vineyard Management.

"If we continue to see drought conditions, we will see a smaller crop," Mr. Bianco said at the news event. "If we get 80 percent of the water of the previous year, we could have 80 percent of the crop of the past year."

The effect of rainfall that's one-fifth of normal by this point in the season is noticeable because of the absence of a common vineyard cover crop — yellow-flowered mustard, which beneficially competes with vines for resources, keeps soil in place and fixes nitrogen in soil. This may call for growers to use compost or fertilizer to provide vine nutrients, Mr. Bianco said.

Growers are concerned about what they are seeing — vines waking up too early from their winter naps. Usually, dormancy lasts until late February or early March. But buds have been seen on about 10 percent of chardonnay vines on the hills of Los Carneros appellation straddling southern Napa and Sonoma counties, and vines also are starting to bud in the Rutherford and Stag's Leap viticultural areas of Napa Valley, Mr. Bianco said.

"Growers and managers are taking very proactive steps," he said.

Crews usually are busy in the vine rows in January beginning pruning, but the warm weather this season has allowed vineyard teams to progress much further by now and to take a number of measurements to determine, he said. Suckering, or removing of

vine shoots, will likely start three to four weeks earlier than the typical April start. Usually done to allow the vine to concentrate its physiology on developing the best fruit, shoot thinning this year will take on new importance by limiting the foliage and clusters the vine needs water to support. Yet there's a balance, because removing too much foliage can lead to on hot days vine shutdown of activity and "sunburn" of exposed fruit.

So tools growers are bringing to the drought fight include the simple — fixing leaking hoses and pipes — to high-tech neutron probes that measure soil moisture and irrigation models based on evapotranspiration, or ET, or the water needs of a plant based on environmental conditions. These tools help with critical timing of irrigation, if a vineyard is has it, and "precision irrigation," or watering portions of a vineyard block at certain times, rather than the entire property.

One thing certain areas of Napa Valley have going for them this year are ample aquifers so far, yet the wine industry is monitoring groundwater closely to see how it's affecting surface water such as major waterways, according to Hal Huffsmith, director of vineyard operations for Trinchero Family Estates.

"We'd prefer to avoid the situation in Paso Robles," he said. Vineyard and other agricultural irrigation is blamed for a significant drop in the water table in that area.

Two years ago, vintners and growers approached the county of Napa to form a Groundwater Resource Advisory Committee that would oversee a program in which growers would agree to have their well performance logged twice annually to help with policy-making.

So far this year, Trinchero's wells throughout Napa Valley, except for some on the hillsides, have adequately performing wells, Mr. Huffsmith said.

"I suspect that even if the drought persists for a couple of years, we will continue to have consistent crops in Napa Valley," he said.

Challenges with adequate water on hillsides to water cover crops is posing challenges with compliance with county of Napa hillside erosion-control guidelines, and growers and public officials are pursuing solutions, according to Mr. Bianco.

Wines and Vines

Central Coast Vineyards Cope With Drought

by Jane Firstenfeld

Fritz Westover of the Vineyard Team in Atascadero, Calif., told Wines & Vines, "It is safe to presume that the root systems of vines are ever-decreasing in size" due to the water shortage.Atascadero, Calif.—It didn't take Gov. Brown's official proclamation last week for California residents to know there is a drought. With no significant rain during the last year—and none forecast for the next 10 days—the air and the ground are dry. Wine country hillsides normally begin to green with the earliest winter rains, but now remain a desiccated, dusty, depressing brown.

Michael Anderson, state climatologist with the California Department of Water Resources, quoted a letter from National Resources Conservation Service district conservationist Rich Casale, who minced no words: "The previous historic dry records have been completely demolished, being shattered by very large deficit numbers which are staggering with complications for the future health and wellbeing of the California economy and California ag....The news thus far this season for water is dismal at best. It would require biblical, epic-type rainfall across California to mitigate the damage....California water supply is heading for severe restrictions...a truly historic, unprecedented drought."

Following the driest year on record, what can grapegrowers do if 2014 continues the pattern?

Fritz Westover, technical program manager for the Vineyard Team (formerly Central Coast Vineyard Team) in Atascadero, Calif., told Wines & Vines how members are coping.

"Some, however not all, growers have reported a reduction in crop and canopy size due to the dry conditions over the past two years," he said. "With little rainfall occurring in the area, it is safe to presume that the root systems of vines are ever-decreasing in size, and root activity is mostly limited to the zone of wetness in irrigated vineyards.

"Attentive growers will likely adjust down their crop level when dormant pruning this winter," Westover said. "I had a long discussion with the president of one of the leading vineyard-management companies on the Central Coast, which is taking this approach to avoid further stress on vines in 2014."

Westover's previous employment in ag extension in Texas gives him special expertise in dealing with drought.

"While I worked with the Texas A&M extension service in 2011, we experienced a severe drought that resulted in smaller canopy size and smaller average cluster weights around the state," he recalled.

"Even with the vines' own compensation mechanisms in place, it was a full two years before some of those vineyards recovered to normal canopy and crop levels. Some are still recovering. Vines on low-vigor rootstocks seemed to be hit the worst in that example. I suspect we could see a similar scenario in some areas of the Central Coast."

No cover story

Those dreary brown vineyards aren't yet brightened by traditional cover crops. At the moment, this is not a problem, but it could become one.

"In addition to the effects on vines, we are also seeing that cover crop establishment is a big challenge in the absence of winter rains," Westover said. "Having less cover crop may be a good tradeoff for water conservation, but if we eventually do get hit with rain events, the infiltration will be less without the cover, and the soil erosion risk also goes up."

The arid winter season has also been a warm one. Many California growers have traditionally used sprinklers to combat frost damage, a highly visible practice that tends to enrage water-conserving neighbors. That's not yet been a problem this season.

"It is too early to know how much irrigation will be used to combat frost this coming spring," Westover said. "If the grower has enough water, and uses it for this purpose, he will also benefit from the uniform moisture distribution it provides to the vineyard. (But) not all growers have the capacity to use water in this way."

Where will water come from?

The majority of the vineyards in the Central Coast rely on irrigation for most of the growing season," according to Westover. "The recent drought has sparked renewed interest in the topic of dry farming, or moving closer to dry farming practices where possible.

"The majority of water used in Central Coast vineyards is ground water. The Paso Robles groundwater basin is likely the most frequently discussed water source in the media these days, where new emergency ordinances have put a halt on new vineyard plantings," Westover said.

Jeff Pomo, vineyard manager for Constellation Wines in California's Monterey County, commented, "100% of our vineyards rely on drip irrigation. The source of our irrigation water is groundwater."

While local or statewide water-use restrictions are not yet in place, they are quite likely on the drawing board. "If there aren't any restrictions on how much water we can use, we plan to deficit irrigate like we always do: Irrigating to about 70% of what the vine is demanding," Pomo said.

"If we start dropping that percentage, then we're going to see a decrease in yields and a reduction in the overall vine shoot growth. This reduced shoot growth could negatively

affect next year's yields as well, because the fruit for next year is in the undeveloped buds on this year's shoot growth," he noted.

Given Constellation's multiple brands and the vast acreage needed to support production of more than 16 million cases annually, "On average we irrigate about 1.1 acre feet of water per acre per year (about 360,000 gallons per acre per year)," he specified.

"We have had to drip irrigate most of this winter because of how dry it's been. That is not normal. We normally stop irrigating the beginning of November and don't start again until February or March.

"We don't have any overhead sprinklers to irrigate the cover crop, so the cover crop hasn't grown. One of the biggest concerns for us is that the water we use to irrigate is high in salts. Throughout the growing season, while we're frequently irrigating, the salts can build up in the top layer of soil. Salt concentration in your soil can negatively affect overall plant growth.

"We rely on our winter rainfall to flush the root zone of those salts that built up from the prior year's irrigations. Last year's winter was below average as well, and we saw stunted growth in some of our less-tolerant rootstock blocks. A second year in a row of low rainfall is going to cause an even greater concentration of salts in the soil, and even poorer growth than last year.

A scary season

Pomo added a side note: "It has also been unseasonably warm. This is causing the vines to want to push earlier than normal. We expect to see bud break two to three weeks earlier than normal this year. That's scary, because that means the window for getting frost damage is just that much greater now."

With the last measurable precipitation being 0.19 inch in December 2012, and a scant sprinkle in November 2013, Monterey County vineyards are "dusty in the middle of January," said Andy Mitchell, director of vineyard operations at 400,000-case Hahn Family Wines. "Last year was bad, but this year is much worse."

Matt Shea, vineyard manager for 50,000-case Bernardus Vineyards & Winery in Carmel Valley, and a board member of the Monterey County Vintners and Growers Association, summarized information from the 65 member vineyards: "The overall average percentage for most of our reporting sites is 9% to 11%; however, the percent total for water year is only at 3% to 4%." Most of these are 100% irrigated.

He complimented association members: "Our vineyards are very resourceful and are no strangers to dry weather conditions. They capture rainfall, have wells and river pumps.

Hahn's vineyards are 100% irrigated with groundwater from the Salinas River and Arroyo Seco ("dry riverbed") River watershed aquifers, Mitchell said. Hahn will continue to monitor and judiciously use its water resources to ensure vine health, he said. "Stressed vines do not hold up as well as vines that are not....Until the threat of cold

weather is over, which really varies from one region to the next, vineyard soil moisture levels should be maintained as high as possible."

Shea emphasized too: "Most have been irrigating on and off all winter. When possible, it's extremely important to keep the root zone from completely drying out, and provide the soil and plant with what would be a "normal" precipitation amount.

Mitchell noted yet another cost of the drought: "Extremely high utility bills for what should be a slow time of year for pumps and irrigators. Cover crops are nearly non-existent in blocks that are drip irrigated."

Santa skipped Santas Cruz and Barbara

The Santa Cruz Mountains normally get much more rain than other Central Coast regions, but, said Mary Lindsey, who handles marketing and sales for 300-case Muns Vineyard in Los Gatos, Calif., and serves as president of the Viticulture Association of the Santa Cruz Mountains: "We had almost the full season's normal precipitation in two months: November and December 2012. Enough to charge the soil through the 2013 growing season." After a few inches in the spring of 2013, and a couple of inches late in the year, "So far this year: Zilch....Everyone is hurting for rain."

The major sources for growers who irrigate in the AVA's many microclimates are wells, Lindsey said, although some have dried up.

"The lack of water is impacting cover crops," she said. "It is so dry there is none to speak of. Usually the cover crop is greening by now. Those who planted seed at the end of last year aren't seeing any growth. This could impact soil health, dust mitigation and erosion control.

"If you're not on top of your gopher population, they're moving into the vine root zones where they can find food and more moisture.

It's not just the lack of rain, but also the spring-like temperatures right now that are of concern. Daffodils are blooming two months earlier than usual, and if this weather keeps up, there is a concern that bud break will be very early: Soon," she warned.

"Some of us have a concern about what a foreshortened dormancy might mean on vine health. And given the healthy crop load over the past two seasons, it would not be surprising if this year's crop load is reduced."

Farther south in Santa Barbara County, Wes Hagen, vineyard manager/winemaker at Lompoc's 1,700-case Clos Pepe, reported only 3 inches of rain in the past 12 months. His vineyards—and, he reckoned, most others in the county—are irrigated. Clos Pepe uses ground water from the Santa Ynez River.

Hagen offered recommendations to fellow growers: "Run water sets at night to maximize efficiency, 100% drip emitter irrigation....Minimize all sprinkler activity.

"Be very careful just to replace evapotranspiration (ETO) and not overwater, apply materials to flush salts from the root zone to make water more available to drought-impacted roots with salt accumulation," he advised.

Is there any help?

Lindsey shared an excerpt from a letter she received from the USDA Natural Resources Conservation Service (NRCS), offering to "Help you with your drought concerns by making site-specific recommendations and/or by creating a plan that will allow you to continue and/or adapt your operation even in the most severe conditions. NRCS provides information, technical and financial assistance with irrigation-system improvements and water management; water storage; retention of soil moisture; selection of drought resistant plants; runoff recovery; as well as many other practices that can help to mitigate the effects of drought."

Westover commented, "It may be too early to say how drought has affected vineyards to date. A study by UC Cooperative Extension is showing that salt levels have accumulated in vineyard soils over the years, and I imagine that this problem will be exacerbated by the drought."

Plant ahead

"Winter is usually the time when salts are flushed from soils with rainwater. There seems to be a trend for vines on vigorous rootstocks to be holding up a bit better," Westover said. "I have observed in more than one vineyard that canopy size of vines growing on 1103 Paulson rootstock were noticeably larger than those on the same variety on 101-14 Mgt. This is strictly observational, but it matches trends observed during the Texas drought in 2011.

"The Vineyard Team has been positioning itself to provide educational and cost-share programs and hands-on vineyard demonstrations to assist water monitoring and irrigation decisions by growers. Our team will initiate irrigation monitoring demonstrations in three Central Coast vineyards in 2014 to showcase technologies for monitoring soil and plant moisture.

"The demonstrations will take place over the next two years, in which time we will also hold educational tailgate meetings at the vineyards, hosting experts to speak on irrigation monitoring technologies. Our team is actively pursuing partnerships with Pacific Gas & Electric and the Fresno Center for Irrigation Technology to provide cost-share and technical support for growers to install technologies such as flow meters and soil-moisture sensors in the vineyard. There is a wealth of good information out there to help growers and our goal is to bring these concepts closer to the grower and increase adoption of their use."

AGFAX.com

California: Napa Valley Grapegrowers Outline Plan for Managing DroughtAgFax.Com - Your Online Ag News Source

From a Press Release

In a Tuesday press conference, Napa Valley Grapegrowers outlined plans for managing Napa's 45,200 acres of grapevines in current drought conditions.

During 2013, Napa Valley measured four to eight inches of rain, the driest year on record; so far in 2014, there has been no rain. Typically, annual rainfall is 12-25 inches, with an average of eight inches falling in January.

"The biggest challenge we're immediately facing is an early bud break – the growing season is starting more than a month early," said Domenick Bianco, Member, Napa Valley Grapegrowers and Vineyard Manager, Renteria Vineyard Management. "Now we're forced to adopt vineyard management practices to slow budbreak. This year, we're going to have to be more vigilant than ever – all eyes on the vines at all times – in order to assure a high quality harvest."

•2013 was the driest year on record.

•Napa Valley is now experiencing a 50-75% drop in rain totals.

•To date, there has been no rain in 2014.

•The wine industry dubs July 1 – January 31 'water months' and Napa Valley Grapegrowers hold out high hopes for drought-ending rain, February – April.

•Recent measurement of ground water shows supplies are stable on the Valley floor and less predictable on the hills. However, the presence of groundwater doesn't make up for the lack of rain.

Vines

The lack of rain is forcing grapegrowers to proactively change their cultivation practices, anticipating a compacted growing season. This includes:

•Annual winter pruning to remove excess canes while the vines are dormant typically takes place January – April; currently pruning is more than 50% complete Valley-wide, substantially ahead of schedule.

•Budbreak, which signals the end of dormancy and the start of the growing season, is already underway in Carneros, Stags Leap and Howell Mountain; mostly on

Chardonnay vines, four to six weeks early. Grapegrowers are now delaying pruning schedules to hold back budbreak.

•Cover crops – mustard, cereals and flowers – planted each fall – that grow between the vine rows are nearly non-existent. While beneficial in most years, cover crops compete with grapevines for nutrients and water. Existing cover crops are now being assessed vineyard by vineyard to determine whether cultivation is warranted.

•Due to reduced cover crops, grape growers will be using compost and mulch to provide vital nutrients and increase water-holding capacity of the soil.

•Vines in distress have the potential of attracting more pests – grape growers will be vigilantly looking for mites and leaf hoppers.

•Lack of rain water will result in smaller vines and lower yields, less foliage and fewer protective leaf canopies.

•Managing the vines will include early, aggressive shoot thinning. This may lead to labor shortage issues if all vineyards need to thin shoots at the same time.

•Grape quality and pricing can't be determined until critical growth stages of the vine have been completed, typically late summer.

Technology

More than any other year, technology will be central to helping vineyard managers and supervisors be good stewards of the land and the vines and manage their water resources.

•In-the-field technology allows vineyard managers to precision irrigate – strategically drip irrigating only small blocks of grapes that need water, rather than an entire vineyard.

•Constant monitoring of soil moisture probes and vineyard weather stations allows immediate response to vine needs.

•Most irrigation will take place at night to reduce evaporation.

Napa Valley Register.com

Vintners committed to leading reduction of greenhouse gases

September 08, 2011 12:00 am

Among one of the most important topics of the moment is that of greenhouse gas or carbon emissions, and what we can do as an agricultural community to mitigate our impact on the environment. In keeping with Assembly Bill 32 and the Napa County General Plan, the county has recently drafted a Climate Action Plan for unincorporated Napa County. The plan is intended to provide a baseline inventory of greenhouse gas emissions from all sources in unincorporated Napa County as well as strategies for reducing those emissions as required by law to 1990 levels by 2020.

As the largest employer in Napa County, the wine industry is taking reduction measures seriously. Vintners, grapegrowers and county agencies are all working together to research what we can do together to meet AB 32 requirements. The good news is that, due to our forward-thinking land-use policies and voter-approved zoning regulations identifying a majority of the county as either Agricultural Preserve or Agricultural Watershed, and only allowing agriculture to take place on those lands, has already put us ahead of the game in mitigation efforts in comparison to more urban counties.

One of the many items the Napa County wine industry is engaged in for reducing greenhouse gas emissions is Napa Green Certified Winery, a program created by the Napa Valley Vintners in 2007, in partnership with the Napa County Department of Environmental Management and the Bay Area Green Business Program. To achieve certification by county, state and federal government agencies, wineries must be in compliance with all regulations, provide audits showing a reduction in energy and water use, an increase in recycling and a reduction in overall pollution due to careful management of materials. The program is voluntary, and to date, more than 2.5 million cases of wine are produced in Napa Green Certified Winery facilities.

The vineyard's development of Napa Green Certified Land was initiated by Napa Valley's collaboration between local vintners and growers as well as representatives from government agencies and environmental organizations beginning in 2000. Napa Green Certified Land, based on Fish-Friendly Farming principals, is the most comprehensive and stringent farming program in the industry. It is a voluntary program for Napa Valley vintners and grapegrowers that enhances the watershed and restores habitat with innovative, tailored sustainable agriculture practices.

Currently, 45,000 acres are enrolled in the program (nearly 10 percent of all land in Napa County) and more than 19,000 acres are certified, with thousands more about to receive official certification. A majority

(90 percent) of the Napa River watershed is in private ownership and public/private partnerships, so programs like Napa Green are vital to our community. Plan details are unique to each owner's property and include chemical reduction or elimination, soil conservation, restoration of wildlife habitat and riparian environments and more with sustainable agriculture practices. The Napa Valley Vintners is proud to be a leader and

a partner with our community in finding strategies to reduce greenhouse gas emissions to ensure compliance for a healthy, sustainable future.

Wine Institute

The Greening Of California Wine Country

Regional Wine Associations Share Local Examples of Sustainable Winegrowing

Being good stewards of the land as well as good neighbors are important business and personal values in the wine community. A healthy and beautiful environment benefits neighbors, communities and wine country visitors. Vintners and their employees benefit as well because most of them live at or near their wineries. Earth-friendly methods also produce high quality winegrapes and leave a lasting legacy for future generations.

Building on these major trends and successful regional efforts, California's vintners and winegrowers joined together in 2002 to introduce the statewide Code of Sustainable Winegrowing Practices—a best management practices guide and self-evaluation tool that covers all aspects of winegrape growing and winemaking. The Code includes methods for reducing water and energy use, minimizing pesticide use, building healthy soil, protecting air and water quality, recycling natural resources, maintaining surrounding habitat, providing employee education, communicating with neighbors about vineyard and winery operations, and more.

Several thousand vintners and growers have participated in educational workshops throughout the state, and more than 1,300 workshop attendees have evaluated their operations through the program to expand their sustainable winegrowing practices. The effort is the first time an entire industry sector has scientifically documented their level of sustainability. The results are published in the 2004 California Wine Community Sustainability Report. Nothing illustrates the California wine community's commitment to being a global leader in sustainability better than the many on-the-ground examples from the state's diverse winegrowing regions.

Lake County

Diverse and beautiful rural landscapes surround the Lake County winegrowers in the North Coast. The area's cool mountain climate is unfavorable to many pests and diseases that trouble other growing regions. This natural advantage has helped reinforce the commitment of winegrape growers to preserve the land and other natural resources. Lake County winegrowers were among the first to embrace the Code of Sustainable Winegrowing Practices when it was introduced in 2002, and over 70 percent of the growers have participated in sustainability workshops. The county's winegrowers continue to support a year-round education program to expand sustainable winegrowing and other high quality wine production methods.

Several of Lake County's wineries are building a sustainable future. Among them is Ceago Vinegarden, which combines biodynamic farming with ecological building to create an educational and hospitality center on the North Shore of Clear Lake. Cougar's Leap Winery has built its facility entirely off the power grid, using photovoltaic and ground source cooling to power the winery. Six Sigma Winery donated a conservation easement when it originally acquired the property and established vineyards integrated

with native vegetation and wildlife corridors to preserve natural habitat for deer, bobcat, and other animals that grace the area.

Lodi

Wine consumers will be able to express their support of sustainability when California's first set of certified sustainable-grown wines reach the market. The "Lodi Rules for Sustainable Winegrowing" is an innovative program building upon Lodi's long-standing leadership in environmentally friendly farming. Participating growers believe the program will lead to higher quality wines from the Lodi appellation. In the first year, 2005, 1,400 acres were certified under the program. A proposed 6,200 acres will be audited in the fall of 2006. "Lodi Rules" wines will be distinguished by the red "Lodi Rules" logo on the label. Watch for these wines to reach the market soon.

Napa Valley

Over the past few years, Napa Valley vintners and growers have worked together to develop a voluntary program called Napa Green, which enhances the watershed and restores habitat through a comprehensive set of sustainable agriculture practices. Currently there are 17,000 acres enrolled in the program, which looks at not only vineyard or farmed land, but also the roads, buildings, stream set-backs and non-farmed land of the grower/farmer. This year the program is being expanded to develop a code of sustainable and green practices for use throughout the winemaking process. The Code will help demonstrate to regulators, distributors and consumers that certified wineries are implementing sustainable practices and protecting the environmental quality of the Napa Valley region. There are almost 40 Napa Valley wineries, ranging from large to small vineyards, currently participating in the program, including Beringer Vineyards, Saintsbury, Peju Province, Trinchero Family Estates and Larkmead Vineyards.

Paso Robles

Paso Robles Wine Country, located along California's Central Coast, has many leading examples of sustainable farming programs. Visitors can find certified organic vineyards at Tablas Creek, solar energy panels at L'Aventure, and use of biodiesel fuel at Halter Ranch Vineyard. Pipestone Vineyards established and manages its organic vineyards using principles of feng shui. Native grasses, wild sage and rosemary flourish between vine rows at Adelaida Cellars. Robert Hall Vineyards uses aggressive deficit irrigation practices in the vineyards to conserve water and develop concentrated flavor and color in the wines. Five Rivers Winery uses several environmental practices, including energy efficient tanks that handle both heating and cooling, recycled building materials and rocks from local quarries, and a night air-cooling system to minimize cooling costs. These are just a few of the methods that have become a way of life for the region's sustainable farming vision in Paso Robles.

Sonoma County

Sonoma County is among the leaders in sustainable winegrowing. As a longtime agricultural region, the county has a close connection to the land and a long history of environmental stewardship. More than 250 Sonoma County wineries and grapegrowers participate in the statewide Code of Sustainable Winegrowing Practices, a voluntary self-assessment designed to ensure proper care of the land. Pesticide use in Sonoma County has decreased every year since 1997, while grape acreage during that period has increased by more than 50 percent! Numerous wineries, such as Quivira, Peter Michael Winery, Davis Bynum, Moon Mountain Vineyards, Kunde Estate Winery & Vineyards and Benziger Family Winery, use a combination of integrated pest management, soil and water conservation, fish-friendly farming and other environmental practices to guarantee that Sonoma County's land and vineyards will remain healthy and sustainable now and far into the future.

Governor Arnold Schwarzenegger has declared September 2006 as California Wine Month. Now is a great time to visit the state's wine regions, as special events and complimentary wine tastings are being offered at many wineries. Visit the California Wine Month web site to learn more about what's happening in California wine country.

Retailers, restaurateurs and other significant partners are also supporting California Wine Month 2006. Partners for 2006 include Safeway Stores (which will promote California wine in 22 states), Cost Plus World Market, Beverages and More, P.F. Chang's China Bistro, Morton's Steakhouses, Tavistock Restaurant Group, Joie de Vivre Hotels, the San Francisco Chronicle, the California Restaurant Association and Culinary Institute of America at Greystone.

Wines and Vines

Vincor Pomace to Power Greenhouse

Grape waste will yield methane gas to generate electricity
by Hudson Cattell and Linda Jones McKee

Wineries generate mountains of pomace with every vintage. Ontario's Vincor hopes three of its wineries will generate both electricity and revenue from theirs.Niagara-on-the Lake, Ontario -- At this time of year, all wineries face a problem: What can we do with the pomace that the crush has generated? The answer often is to put it back into the vineyard or send it to a landfill. Vincor Canada in Niagara-on-the-Lake, Ontario, has come up with a different solution, one that will help the environment by providing an alternative energy source to another local company and contribute to the wine producer's bottom line.

Vincor plans to sell about 3,500 tonnes (about 3,858 U.S. tons) of pomace from its three Niagara-area wineries to Vandermeer Greenhouses in Niagara-on-the-Lake. Vandermeer will then use the grape residue to create electricity to heat its greenhouses.

Using a process known as anaerobic digestion, which breaks down organic matter in an oxygen-free environment, Vandermeer will capture the methane gas that is produced by the decomposition of the grape pomace and use it to generate electricity. If there is excess after the needs of Vandermeer's greenhouse operations have been met, surplus electricity would be sold to the Ontario Hydro grid.

The anaerobic digester is sizeable, and requires ample space. The primary digester is 18 meters in diameter and 6 meters high (about 60 by 20 feet); the secondary digester is the same size and the digestate storage container is 30 meters in diameter and 6 meters high. There will also be a bunker for storage of the input materials and a separator for sorting the solid fraction of the digestate for re-use in the greenhouse. Vandermeer's anaerobic digester was developed in conjunction with CEM Engineering and PlanET Biogas.

In addition to the grape pomace, the Vandermeer anaerobic digester will use chicken manure, greenhouse clippings and other organic material. Vandermeer Greenhouses has 280,000 square feet under plastic, and produces 5.5 million stems per year of 20 varieties of spray chrysanthemums.

According to Jay Wright, president and CEO of Vincor, Bruce Nicholson, the senior winemaker at Inniskillin, decided in the interest of the environment to stop the practice of transporting pomace to a landfill by finding a way to convert the winemaking waste into clean electrical energy. He talked it over with Brad Wells, the engineer at Jackson-Triggs, who is also passionate about the environment, and the result was a one-year agreement with Vandermeer Greenhouses that starts with the 2008 harvest.

Wright declined to estimate the amount Vandermeer will pay Vincor. He did tell Wines & Vines, "We're working through that. I can tell you that it will be less than $100,000 and more than $10,000."

Wineries generating the pomace for the alternative energy project include Inniskillin Wines and Jackson-Triggs Niagara Estate Winery both in Niagara-on-the-Lake, and Vincor Niagara Cellars in Niagara Falls. According to Wines & Vines' 2008 Annual Directory, these produce in excess of 250,000 cases of wine per year.

"We are very pleased that we're able in our small way to reduce our carbon footprint," Wright said. "This is not only a win for the environment, but it will result in significant cost savings for Vincor."

Frog's Leap Vineyards

Frog's Leap is home amongst 130 acres of vineyards in Rutherford at the historic Red Barn. This grand and welcoming building was built in 1884 as the Adamson Winery and renovated in 1994 as Frog's Leap's permanent home. Using the best of Napa Valley's organically grown grapes and the most traditional winemaking techniques; Frog's Leap strives to produce wines that deeply reflect the soils and climate from which they emanate.

Constellation Brands

Constellation Brands is a leading wine, beer and spirits company with a broad portfolio of premium brands. Constellation is the world leader in premium wine, the number three beer company in the U.S. and the leading multi-category beverage alcohol company in the U.S.

The company's brand portfolio includes brands like Arbor Mist, Black Box, Black Velvet Canadian Whisky, Blackstone, Clos du Bois, Corona Extra, Corona Light, Estancia, Franciscan Estate, Inniskillin, Kim Crawford, Mark West, Modelo Especial, Mount Veeder, Negra Modelo, Nobilo, Pacifico, Ravenswood, Rex Goliath, Robert Mondavi, Ruffino, SIMI, SVEDKA Vodka, Toasted Head and Wild Horse.

Constellation Brands (NYSE: STZ and STZ.B) is an S&P 500 Index and Fortune 1000® company with more than 100 brands in our portfolio, sales in approximately 100 countries and operations in approximately 40 facilities. The company believes that industry leadership involves a commitment to our brands, to the trade, to the land, to investors and to different people around the world who turn to our products when celebrating big moments or enjoying quiet ones. We express this commitment through our vision: to elevate life with every glass raised.

Constellation Brands is the:

- #1 premium wine producer in the world
- #1 multi-category beverage alcohol company in the U.S.
- #3 beer company in the U.S.
- #1 wine company in Canada
- #1 producer of New Zealand wine

Paso Robles Wine Country

Jerry Reaugh
Founder and Chairman PRAAGS
Paso Robles Agricultural Alliance for Groundwater Solutions

Business Experience:
Silicon Valley Businessman and Executive 1969 to 1997
Small Business Owner 1987 – 1995
Winegrape Grower Paso Robles 1998 to present

Volunteer &Service:
Founder and Chairman PRAAGS 2013 to present
Paso Robles Basin, Blue Ribbon Committee, alternate, 2012 to 2014
Paso Robles Wine County Alliance
  Board Member and Treasurer, 2000-2005
  Numerous committees and projects
Friends of Hearst Castle
  Board Member, Treasurer and President, 2000-2008
Hospice of the Valley, San Jose
  Board Member and Treasurer, 1994-1998

Education:
Claremont McKenna College, BA Economics and Liberal Arts
Stanford University BS, MS Industrial Engineering
  Tau Beta Pi
  Terman Engineering Scholastic Award

E&J Gallo Winery

Since brothers Ernest and Julio Gallo began to turn their dream into reality over 80 years ago, the roots of the Gallo family tree have extended deep into the Winery. Today their children, grandchildren and great-grandchildren work in the Winery, carrying on the family tradition and values – a strong work ethic, a drive for perfection and a focus on quality.

Julio Gallo introduced an innovative approach to land conservation known as the "50/50 Give Back" plan in Sonoma County. For every acre of land planted in vineyard, Julio set aside one acre of property for wildlife habitat. This is a practice they continue today.

E. & J. Gallo Winery took the lead in drafting the Code of Sustainable Wine Growing Practices as part of a collaborative effort with the Wine Institute and the California Association of Winegrape Growers. We were also the first winery in the U.S. to receive the International Organization of Standards ISO 14001 certification for our implementation of an environmental management system to enhance our efforts to protect the environment. Today, E. & J. Gallo Winery is the world's largest family-owned winery and the largest exporter of California wine.

Cooper-Garrod Estate Vineyards

The sunny days, moderate nights, and long growing season of the Santa Cruz Mountains, which are south of San Francisco and overlook the Pacific Ocean and the San Francisco Bay, have long been recognized as ideal for world class wines.

The Garrod family began involvement with California agriculture and open space in 1893, purchasing lands from the Mount Eden Orchard and Vineyard Company. Our label recalls glorious apricot and prune blossoms which enhanced spring views from our hillside early in the previous century. Since 1972, aging orchards have been replaced with grapes which thrive in this microclimate.

So continues the agricultural tradition begun by winemaker Bill Cooper and vineyard master Jan Garrod's great-grandfather. Winemaker Emeritus George Cooper refined his craft by learning from his fellow vintners in the Santa Cruz Mountains, Napa Valley, Burgundy, and Bordeaux.

Mendocino Farm Bureau

Devon Jones

Executive Director, Mendocino County Farm Bureau

Devon attended UC Davis, where she received her Bachelor of Science degree in Animal Science and her Master of Science degree in Ruminant Nutrition. Devon moved to Mendocino County in 2004 and accepted the position as the Executive Director of the Mendocino County Farm Bureau in 2009. While working for Farm Bureau, Devon has been engaged in a number of issues with the primary areas of focus being water rights, water quality, land use and air quality.

Rutherford Grove Winery

A descendent of two winemaking families whose roots in Napa Valley reach back nearly a century, Bob Pestoni was expected to follow in his parents' footsteps. Of course he did become a winemaker – but not at first. Instead, he did what any red-blooded boy in the 1950s did: he rebelled.

In 1963, Bob and his brother Marvin created Upper Valley Disposal Service, becoming the refuse hauler for the upper Napa Valley. Coming from a family of farmers who depended on the land for their survival, they understood and practiced the art of sustainable farming: planting the right crops, observing proper rotation and always striving to achieve a balance with the land. It was these same lessons and values that propelled their introduction of an aggressive recycling program long before it was fashionable.

In the late 1970s two problems began to weigh on the local wine industry. The first: what to do with the pomace, the grape skin, pulp, seeds and stems left over after crushing. At the time, local wineries were dumping it back into their vineyards or at their property's edge where it would seep into groundwater. The second problem was how to reduce the use of chemical fertilizers, which were also having negative effects on the Napa Valley. Bob began to experiment with an age-old farming practice that had somehow gone out of style: composting. By the 1980s, Upper Valley Recycling was processing nearly all the discarded grape seeds, skins and stems from the Up Valley wineries into compost – an innovation that landed Bob a centerfold appearance in National Geographic Magazine.

In the mid 1990s, Bob and his wife Sylvia were presented with a rare opportunity. A small winery adjacent to their family's Rutherford property had become available for purchase. Over the years, Bob and Sylvia had always grown grapes on their land, but they had always sold their fruit to other wine producers. They hadn't been interested in becoming vintners before, but the acquisition of this new property renewed Bob's admiration for his family's business – and for his heritage. In 1994, they opened the doors to Rutherford Grove Winery and resumed making the single vineyard, hand-crafted artisanal wines Bob's father and grandfather had created there for more than a century before him.

Delicato Family Vineyards (DFV)

When Gasparé Indelicato emigrated to California from the small village of Campobello in Italy, it was only natural that he would do the one thing he knew he could do better than anything else – grow wine grapes like his father, grandfather and several generations before him. He planted the first grapes for Delicato Family Vineyards in the spring of 1924. Within a few years, winemakers across the country knew of the quality of Gasparé's California grapes.

His hard work was rewarded with more orders than he could fill. During Prohibition, Gasparé's grapes were sought after by home winemakers seeking quality grapes for home winemaking. But early success turned into hard times; grape sales declined during the Great Depression.

In 1935, with Prohibition repealed, Gasparé made the decision to turn a portion of his grapes into wine, using techniques his father had taught him. In the old hay barn by the vineyard, Gasparé, his brother-in-law, and their twin wives took turns with a hand driven press to produce their first vintage consisting of 3,451 gallons of wine (that's just under 1,500 cases of wine).

Gasparé established a reputation for great winemaking, and other producers in the budding California wine industry approached Gasparé and his family for custom-made wines. To meet the demand, the family acquired additional vineyard land. Gasparé's three sons, Vincent, Frank and Anthony, joined the family winery as the business grew. Today, Chris and Jay Indelicato, third generation family members and Anthony's sons, are leading the business into the future under the name DFV Wines.

Today, DFV Wines is one of the leading family winegrowers in America, with members of the second and third generation actively involved in the business. The winery harvests some of the most diverse and desirable vineyard estates across the top regions of California. These range from San Bernabe Vineyard in Monterey, one of California's oldest grape-growing regions, to Clay Station, a remarkable vineyard property located in the rolling, sunny foothills in Lodi.

The Indelicato family is devoted to its California winemaking heritage of family farming, environmentally sensitive winegrowing practices and economically sustainable principles. It is with an eye for the continued success of the family winery, and the success of their business partners, that they have developed a strategic direction that protects and enhances the things they hold most dear – family, farming and quality wine for consumers.

Wente Vineyards

In 1883, C. H. Wente, a first-generation immigrant from Germany, purchased 48 acres in the Livermore Valley. Recognizing that the warm days, cool nights and gravelly soils of the Livermore Valley were ideal for growing grapes, he planted vines and founded Wente Vineyards. 130 years later, the Wente Estates continue to be family owned and operated by the fourth and fifth generation Wente's, Eric, Philip, Carolyn, Christine and Karl.

Since 1883, five generations of the Wente family have planted, grown and harvested fruit from their estate vineyards. More than a century of committed stewardship of the land has led to the development

of the Wente family's Farming for the Future program. Created with the health and well-being of its employees, the local community and the planet in mind, Farming for the Future is a system of practices that enhances the vitality of the soils, creates a balanced, sustainable ecology, minimizes water use and reduces non-organic wastes.

Selland Restaurant Group

The Selland Group is a family owned and operated organization specializing in high-end, personalized, unforgettable dining experiences. For over 20 years, the Husband and Wife Chief team of Randall Selland and Nancy Zimmer, along with their grown children Tamera Baker and Josh Nelson, have left an indelible mark on the Sacramento dining scene with their trailblazing cuisine, elegant design aesthetic, faultless service, organize hospitality, and cutting-edge food philosophy.

The Selland Family were "locavores" long before it was hip to be so. They pioneered the use of local grown, sustainable, organic ingredients and championed the principals of farm-to-table philosophy from the start. Always ahead of the pack throughout their 20 years in business, the Selland Group first began its culinary adventure with the Kitchen Catering, which ultimately led to the establishment of The Kitchen Restaurant. The family has since opened up the Selland's Market Café, and Ella Dining Room and Bar.

Sonoma Winegrape Commission

The Sonoma County Winegrape Commission was established in 2006 as a non-profit marketing and educational organization dedicated to the promotion and preservation of Sonoma County as one of the world's premier grape growing regions. With more than 1,800 growers, SCWC's goal is to increase awareness and recognition of the quality and diversity of Sonoma County's grapes and wines through dynamic marketing and educational programs targeted to wine consumers around the world.

Informational Hearing
of the
SENATE SELECT COMMITTEE ON CALIFORNIA'S WINE INDUSTRY
Senator Noreen Evans, Chair

ASSEMBLY SELECT COMMITTEE ON WINE
Assemblymember Wesley Chesbro, Chair

ASSEMBLY SELECT COMMITTEE ON SUSTAINABLE AND ORGANIC AGRICULTURE
Assemblymember Mariko Yamada, Chair

"Sustainable Winegrowing: Impacts on Water Drought, Greenhouse Gas Emissions and Retail Sectors"

March 18, 2014
State Capitol

ASSEMBLYMEMBER WESLEY CHESBRO: Well, good afternoon. I would like to welcome everyone here today to the joint legislative sustainable wine hearing. This hearing's an opportunity for the wine industry to discuss and showcase many of their sustainable practices.

California's wine industry has long been a national leader in the organic and sustainable agricultural movements. We are fortunate that so many of our vintners have a high degree of conscientiousness—and consciousness—about what they do and how it affects the environment. They are pioneers, leading the nation in environmentally friendly farming and winemaking.

Today's first panel focuses on water, both the impacts of the drought on the wine industry and their response to it, using various water efficiency techniques. The second panel highlights the industry's energy efficiency and greenhouse gas mitigation efforts. And our final panel provides a brief look at sustainable winegrowing, ecotourism, and promoting sustainable wine products.

This afternoon's hearing will be quite interesting and informative. I'm excited to hear the presentations.

Senator Evans, as chair of the Senate Select Committee on California's Wine Industry, would you like to make some opening remarks?

SENATOR NOREEN EVANS: I certainly would.

Thank you very much, Mr. Chesbro, and thank you to all of you for coming today. I remember last year's hearing on sustainable winegrape growing. It was very exciting to hear the things that the industry is doing. And so, I look forward to an update on what has happened over the past year.

It's great to see a whole group of people from all of California's winegrape growing…many winegrape growing regions, particularly in my own Senate district, as well as your Assembly district, Mr. Chesbro, and yours as well, Ms. Yamada, and my hometown, from Livermore and Alameda County and others.

We have an interesting agenda for today. The issue of the day, of course, is the drought and the impact not only on…well, statewide, I guess, and particularly the focus will be today on the effects of the drought on the winegrape growing industry. But that's kind of like the topic for today. And then we also have panels that relate to issues that we'll be looking at for the future, such as ecotourism, which I personally am very interested in, as well as energy efficiency and greenhouse gas mitigation, which affects all of us.

So I'm very much looking forward to the testimony of today's panelists. And again, thank you all for coming.

ASSEMBLYMEMBER CHESBRO: Thank you, Senator Evans.

And Assemblywoman Yamada chairs the Assembly Select Committee on Sustainable and Organic Agriculture. Would you like to say some opening words?

ASSEMBLYMEMBER MARIKO YAMADA: Sure, very quickly.

Thank you, Chair Chesbro and Chair Evans, for including the Assembly Select Committee on Sustainable and Organic Agriculture, that I've been pleased to chair now going into four years. We really appreciate this opportunity to join with you.

Our committee purview is a little bit broader than just wine, but I think today's hearing is probably the happiest hearing that's taking place in the building. We want to be sure that what we are doing as a whole certainly is supportive of this very vital agricultural industry in California that serves the world, and that we learn from each other, because I think some of the wine industry's practices for sustainable farming could certainly expand and have some

generalizations to other farm commodities. Just the practices that you have already put in place, and should be recognized and rewarded for, I think are important for us to all hear.

So thank you very much for this opportunity to join you, and I look forward to hearing the testimony.

ASSEMBLYMEMBER CHESBRO: I'd also like to welcome our committee members, Assemblymembers Olsen and Stone. Would either of you like to make any opening comments? Thanks for being here.

Thanks to everybody for being here.

In introduction to the first panel, let me just say a little bit of background. On January 17, Governor Brown proclaimed a state of emergency and directed state officials to take all necessary action to prepare for drought conditions. At the time, reservoir levels were at an all-time low and lack of rain and snowfall were of grave concern. In spite of above-average rain and snow in February and early March, much of California still has only received about 50 percent of normal precipitation, and our snowpack is at a mere 29 percent of normal. We are told that it would have to heavily rain from now through the end of May to reach the average annual rainfall and snowfall levels, and even then, California would still have drought conditions because of the two prior years of dry winters causing extremely low water levels in our reservoirs.

Earlier this month Governor Brown signed emergency legislation, which we all voted for—we don't want to give him all the credit—that provided funding for shovel-ready water projects and emergency assistance to communities hurt by the drought. This legislation streamlines state rules to enable more water recycling, provide additional funding for infrastructure improvements to increase stormwater capture, and financial assistance to farmers to upgrade irrigation and water pumping systems to reduce water and energy use.

One of the many impacts of this year's drought is the potential devastation of many of California's winegrape growers and vintners. Today we will hear about some of their concerns, such as warmer temperatures causing vines to prematurely bud, resulting in an earlier growing season and a greater susceptibility to frost; lack of cover crops used for nutrients and trapping moisture

for the vines, as well as protecting topsoil erosion, vine vigor, and consideration of whether to remove fruit in an effort to save the vines and whether to plant new vines, given the substantial water needs; and availability of grapes and the potential skyrocketing costs of the fruit, given possible smaller yields.

So we hope none of those things happen, but they are in the realm of possibility. We certainly want to consider all of that, but also the steps that are being taken to help solve the problem of an inadequate supply of water. And I know the winegrape industry has been extremely proactive in that regard.

Let me begin by calling the first three. Actually, I'll call all four of the first panelists up. We have Sean White. We have Devon Jones. We have Steve Smit, John Williams, and Jerry Reaugh. Is that five? Let me call the first three up: Devon Jones and Sean White and also Jerry Reaugh. Come on forward. And I will ask Sean White, with the Russian River Flood Control, to kick it off.

MR. SEAN WHITE: Good afternoon. Thank you for having us here. My name is Sean White. I'm general manager of Russian River Flood Control, and we are the very small sister agency to Sonoma County Water Agency and, essentially, the wholesale water provider in the interior Mendocino County. We get all of our supply from Lake Mendocino.

In general, in the last few years you've heard a lot of press about water use for viticulture in the Upper Russian basin. It has been in the top of the headlines. And one of the things that I really wanted to make sure that I got out there—really, from my perspective, which is that of a water manager—is I'm thankful that's what I have. You know, if you look at the history of our upper valley right now and our current water supply situation—we have towns in the Upper Russian River with names like Hopland, and there's no hops anymore, and since they use four acre-feet a year, I'm excited about that.

ASSEMBLYMEMBER CHESBRO: We have a town in Humboldt called Blue Lake and there's no lake.

MR. WHITE: Right, exactly. You know, as much sort of fanfare as there has been about the actual water use of viticulture in the Upper Russian River, pretty typical for my customers to use somewhere between three-quarters of an acre-foot to an acre-foot a year for total crop production based on…or compared to

things that it's replaced; like pears were very prevalent in our area. That's about two-and-a-half to three acre-foot per acre. We had lots of hops, which are, again, in our area about three, three-and-a-half acre-feet per acre. And then we still have a little bit of fodder, which is almost four feet per year. So I'm okay with the proliferation of viticulture.

One of the other things that's very important to notice is that, in general and in good years, the actual peak of demand for viticulture is in the spring when it's usually our peak of flow, which is, from a water management perspective, a remarkably compatible thing. All of the other crops that were traditionally in our area had a peak demand sometime in late July. In August, which is definitely not my peak of supply, that's usually when all of our tributaries and things are running low. So during good years and happy times, it's actually a very compatible and very sustainable crop.

However, there are some patterns of use—in particular, for frost protection—that garnered a lot of attention over the last few years. And what I wanted to talk to you about are some of the steps we have taken in the Upper Russian River to mitigate those conflicts during dry springs. Dry springs are particularly problematic in the upper basin for a number of reasons. The spring is the only time we're really allowed to increase storage in our reservoir. So if we get a dry spring, our storage in Lake Mendocino and carryover into the fall is generally very impaired. It's also when vines are budding.

And these dry springs are almost always concomitant with cold, cold weather. It's the clear, cold skies that bring poor rainfall and heavy frost. In 2008 we sort of saw what was the "perfect storm" of those conditions. We had a very, very dry spring and a very, very heavy year of frost. Pretty typical in my district to see somewhere between five to seven frost nights for a season. In 2008, depending on where you were in the upper basin, it was between 20 and 32. It was really quite an exceptional year.

What ended up happening, as those sequence of frost protection events happened and flows continued to recede as runoff diminished, is you would see very dramatic swings in daily discharge in the upper basin. April of 2008 is sort of when it all came to a great, big public crescendo, and on those days we had

somewhere in the neighborhood of 150 cubic-feet per second in the river, and we were seeing 70 CFS diurnal deviations in flow. So essentially, 50 percent of the discharge was coming and going on a 12-hour cycle. That got the attention of a lot of regulators. Lots of things went into motion.

But from the very beginning, myself and Devon and a few other viticulturists in the upper basin started meeting, before there was ever any proposals for frost regulations and other things, about what can we do to mitigate this impact? And it was really about smoothing demand. The problem with frost is it happens to everybody all at the same time, so everybody's turning on at exactly the same time, and they're using overhead irrigation, which is not the normal means of viticulture in our area. It's all drip irrigation, but for frost it's overhead. So you get high demand overhead, all turning on simultaneously, and it creates these big spikes.

So the real solution we came up for this is not having people direct-divert for frost but to basically store water in offstream reservoirs during frost—divert from those—and then during periods where there is no frost, slowly recharging those ponds to not have such a high, instantaneous demand.

During 2008, like I said, these peak swings were about 70 cubic feet per second, and it was sort of our goal as a group to build enough storage to, we thought, at least equal half of that diurnal swing. So we're, like, if we can take 35 CFS offline, we would be successful.

Well, through good fortune and cooperation, that number is now 200 percent. We have, since 2008—we have a table in this little handout we put together—but we have taken a little over 1,200 acres off direct diversion, and we have taken 143 cubic feet per second off direct diversion. So we've more than doubled the maximum daily swing we saw in a handful of years. That was done, in large part you'll see here, by private money and other parts by this program called AWEP. One of the things that we were lucky to do is write a grant for our area. We got $5.7 million for the construction of offstream ponds, and people really stepped up to the plate and went after it. It's one of the things that we're very proud.

ASSEMBLYMEMBER CHESBRO: Can you give us some sense of what proportion of your service area of the ag acres the 1,200 represents? How much of the problem has been solved by that?

MR. WHITE: That 1,200 right now is probably about 30 percent of mainstem diverters in the footprint that we need to deal with it.

ASSEMBLYMEMBER CHESBRO: Is it assumed that this is a work in progress and that you'll continue to march forward …

MR. WHITE: This is absolutely a work in progress. I think what's been sort of interesting as these things have become installed—you know, there was the original reason for doing it, but now there's the other reason for doing it. Most of the viticulturists in my area that have stepped up to the plate and taken this proactive step now are enjoying the luxury of having a pond.

Operationally in our area, what will normally happen is you'll get a big, cold storm front that will move through, and it's on the clearing day after the storm that you get frost. Well, what's happened is it's just rained; the river is at debris torrent. There are logs passing down, and you're trying to slide a diversion in there. It's a very stressful moment. Now if you have six days of storage in a pond while you're watching your neighbors freak out, you just flick the switch. It's a much easier day than it used to be. So there are very good practical implications for doing it as well. I have more going in this year already that I know of, and I'm sure as time passes, it will be more and more.

The other thing that was a big part of our goal back then was to not only start building storage but an alternative source of supply to fill those ponds, and we now have two ponds that by the end of this year will be filled by recycled water. So the recharge water won't even be coming out of the river. And we're hopeful over the next few years we'll start tying even more of these into that system.

SENATOR EVANS: Where are you getting the recycled water?

MR. WHITE: The city of Ukiah. Since everything that's been done to the south of us—Windsor and Santa Rosa and all the places, you know—our tiny burb is now the single largest discharger of waste water into the Russian River. So we are working hard to reduce that—we don't want that title—and put it to beneficial use for things like agriculture.

ASSEMBLYMEMBER CHESBRO: I have a really basic question. I remember the first time I heard of using water to freeze the buds and protect the buds—I mean, to coat the buds—it was very counterintuitive. In case everyone doesn't come from a region where that technique is used, can you just sort of explain how that works, how that protects the buds?

MR. WHITE: It's a confusing situation, but basically, through the change of state and also through ice only getting as cold as 32 degrees, you can prevent through heat loss and conversion state and the fact that it's ice and not frost, you can prevent the buds from going below 32 degrees, which is where actual frost damage occurs. It's when it dips into the high twenties for several hours where you really see burns. So if you can encase them in a medium that's 32 degrees and then continue to pour water on it, the changed state from the water that's still being poured on, any conversion of state you have a loss of heat, and it maintains it at 32 degrees. When I first saw it—I'm not a farmer—I was, like, what?

ASSEMBLYMEMBER CHESBRO: Well, maybe all the other members the first time they heard of it instantly got it, but I got to admit, the first time I heard that you put ice around the buds to protect them, I kind of just tried to figure that one out.

MR. WHITE: And it is important to know that in parts of the Russian River, you can use a lot of alternative methods with machines or other things. But where we're at in upper Mendocino County, we generally don't have cold air to mix with the wind machine. So it's really our only alternative in most sites.

ASSEMBLYMEMBER CHESBRO: Yes, we have a question from Ms. Yamada.

ASSEMBLYMEMBER YAMADA: The source of that five-something million that you mentioned …

MR. WHITE: Five point seven, yes.

ASSEMBLYMEMBER YAMADA: What was the funding source?

MR. WHITE: USDA.

ASSEMBLYMEMBER YAMADA: Okay. So there hopefully will be some continuing funding of that sort?

MR. WHITE: It was a five-year pot. We built ponds every single year using that money. It was an odd grant. Basically, we won the grant but we did not get the money itself. It was basically designated money to our region for the USDA to distribute, and they did, actually, a fabulous job. They were great partners.

ASSEMBLYMEMBER CHESBRO: If there's no other questions, I'd like to certainly welcome our colleague, Mr. Levine, to join us.

Thank you, Sean.

Next we're going to hear from Devon Jones with the Mendocino County Farm Bureau.

MS. DEVON JONES: Thank you for having us here today. I'll kind of segue into what Mr. White was discussing. He sort of touched on where we've been over the last few years, and I'll kind of go into where we're going specific to this year.

This is a whole new territory. I'm sure you have been dealing with it as well at the state level. For us it's been a very drastic year. We're looking at currently, even with the rain that we've received in the last couple of months, we're only sitting about 49 percent of capacity for Lake Mendocino. So it's an improvement. We've all been doing our rain dances in various ways and have been grateful for every drop we've received.

ASSEMBLYMEMBER CHESBRO: I might just say that I've been using the example of Mendocino County of how severe the drought is statewide. I say, *If there's a drought in Mendocino, with the exception of Humboldt—pretty much the rainiest place in the state—then we've got a real serious drought.*

I'm sorry to interrupt.

MS. JONES: No, it's okay. But just to give you an idea, as of January we had less than two inches. El Centro, California had more rain than we did as of January. So that was kind of a scary indicator for us. Right now, even since January, we're not quite between 12 and 14, depending on which rain gauge you actually look at. That's only about 38 percent of normal for us. Typically, we're 25, 26 inches by now this time of year.

We're all doing our part. We've seen some of the change petitions go into place from the water management in Sonoma County. Sean is very much an integral part of that puzzle. His district actually went to a 50 percent mandated

reduction and contract. So it's across the board, trying to set an example for the municipalities in the area.

Agriculture has stepped up. We understand that this is a community issue. It's not just agriculture versus domestic use. We do want to see even cuts. We don't want to see the golf course being watered when livelihoods are at stake, but at the same time, we want to make our contributions as well.

So with that, we've been having a series of meetings; we normally have had since 2008. We've met with Sonoma County and some of the growers down there to kind of get a regional approach and some solutions. We're getting very creative this year in terms of management because we know tough decisions are going to have to be made. The water just isn't there, especially on the tributary systems or for those individuals who don't have the luxury of the storage ponds.

We're seeing a lot of pruning techniques—you know, long pruning, light pruning. We're seeing different cultivation techniques, trying to lock some of the moisture in the soil. Luckily, like I said, with the rains we have received, our soil moisture profile is a lot better than we were looking at in January. We have some folks contemplating irrigation starting in January because of the fact that we had no water moisture left.

So difficult decisions are going to have to be made in some regions. Potter Valley, for example, for part of the watershed. Redwood Valley is potentially looking at zero allocations for water supply for agriculture, depending upon where we go. And so, that could be a potential fiscal loss for a lot of those individuals. They're looking at, like you mentioned, Mr. Chesbro—they were talking about which varieties are they going to protect, which varieties they're not going to protect, how much crop they're going to drop on the ground, depending on contracts that they need to fulfill for this coming year, and they're looking at basically sustaining the actual infrastructure of the vine versus the single-year crop.

So there are going to be difficult decisions that have to be made. We really don't know that damage level as of yet. We're working pretty closely with our ag commissioner who will be doing surveys—probably in late May or early June, once we get through frost season—to kind of determine what those potential damage

levels could be. Some individuals will tell you they're not going to frost-protect. They feel that they can get through it. They're saving what water they do have available for irrigation, or vice versa. Just sort of depends on the personal management decision.

Hopefully, we are going to go into an irrigation system—if we get through the frost season this year—in coordination with Sonoma County Water Agency and the Flood Control District to coordinate potential recharging of the ponds; to assist with the irrigation, doing sort of a first-time scheduling approach per se on the main stem itself to, hopefully, kind of level out demand for irrigation. We also have other commodities that we are concerned about, such as the pears that do have a higher water demand during the summer for sizing the fruit.

So it's going to be a very tricky year. I think this is something that none of us were really prepared for. But I do want to tell you that agriculture is stepping up to the plate. We realize the situation is there, and we're going to do our part to make sure that public health is the priority.

ASSEMBLYMEMBER CHESBRO: I might add, as I'm sure that Senator Evans knows down in Sonoma County, the Russian River is a critical habitat for the endangered coho and other salmon and steelhead fisheries.

Before this series of drought years, the flows and the water temperatures and the other things that happened in the Russian River have been identified by federal state agencies as being of critical import. I know that exists in other agricultural areas in the state, but I think in the Russian River it's of particular concern. So that's another layer of concern, along with the water supply for domestic and commercial use, along with public health and all the other factors that we in the region need to contend with.

MS. JONES: And I appreciate that. Maybe on my final comment on some of that note would be, you know, we are trying to work with USDA and some other funding sources through, sort of, "not letting any good emergency go to waste" sort of mantra. I mean, really the best solution for all the water users, the beneficial water users in this situation, is to be able to put more water into storage. And so, if we can continue to do the projects that we have done, it'll assist both the fishery, the public health components, and agriculture.

ASSEMBLYMEMBER CHESBRO: Okay. I thank you both very much.

Next we're going to hear from Jerry Reaugh, Paso Robles Agricultural Alliance for Groundwater Solutions and owner of Sereno Vista Vineyards. We've been reading a lot about the Central Coast water issues, so I'm looking forward to what you have to tell us about it.

MR. JERRY REAUGH: Well, thank you. It's an honor and a privilege to be able to speak before you today.

I'm Jerry Reaugh. I'm an owner of an 80-acre vineyard. I'm also chairman of PRAAGS. You said the name as well as I can. We are a grassroots organization of viticulturists, other irrigated ag …

ASSEMBLYMEMBER CHESBRO: I assume PRAAGS must be made up of pragmatists, huh?

MR. REAUGH: Well, you're the first one to say that. I've got to remember that.

Yes we are. We're farmers, we're viticulturists, rangeland cattlemen, and we got together as a group to start addressing the water issues in Paso Robles. And so, I'd like to start out with a question—and hopefully I'll answer this question by the end of my little talk here—is, What does a bunch of farmers and rural residents in Paso Robles trying to create a water district have to do with sustainable winegrowing? I hope to answer that question.

We, too, have had a "perfect storm" of events. As you probably know, Paso Robles has been very, very successful in its viticulture and wine industry over the last ten, fifteen years. Along with that, the tourism in our area, both San Luis Obispo and Paso Robles, has been wonderful. There's a great symbiotic relationship between the two. Around the town square in Paso Robles there's 18 restaurants. In '87 you'd probably find two or three restaurants, and all you'd get would be tri-tip. Because of this, our area has been attractive to investment and development, and it's continued to cause—and rightfully so—investment and development.

We've kind of been the Wild West when it comes to water. The only restriction in water in San Luis Obispo County is to pay a $45 drill…going for a $45 permit to drill a well. So as I said, it's been kind of the Wild West, and all of a

sudden the drought hit. And I don't have to talk about the drought. We're all in the middle of it and we know what's involved.

So guess what happened when the drought hit? Wells started going dry. What a strange thing. So the battle began between rural residents—we have kind of a hybrid in our area; there's a bunch of antiquated developments where you have two or three hundred houses right out in the middle of an agricultural area, and each one has their own well. I hate to point out they also have their own septic tank. So the battle began between rural residents and vineyards. And you know you have a problem when CBS national news shows up and does a segment on vineyards versus rural residents. They have the beautiful vineyards and all the land, and then they show somebody with their well going dry. So as you might expect, the debate heated up and raged for months and months.

Finally, the board of supervisors in the county got involved, and they passed a two-year moratorium on all new development; not just vineyard development but all development. Any development over the basin that was not part of one of the cities—if you were going to connect to a groundwater source, you had no development. And so, that meant no new planning. If you wanted to build your beautiful, new horse corral and facility to wash your horses, you can't do it. So you can imagine that caused some controversy.

During this debate two groups emerged: our group, PRAAGS (the pragmatists), and we represented primarily the agricultural interests in there—and another group called PRO Water Equity, which was representing the rural residents concerned about their wells. They look across the street and they see 300 acres of vineyards and they go, *My bowl is going down. It's obvious why that's happening*. So as you might guess, these groups are substantially polarized.

Our local supervisor got us together; he locked us in a room, he turned the heat up and said, *You guys are going to talk*. And after about four or five sessions we were talking. Actually, it was amazing. It became very clear that there was common ground between our groups. I mean, you'd sit down in a meeting and they'd be over there and we'd be over here and with scowling and all of that. The common ground says, okay, there's a general recognition: we have problems with water in our basin; we need solutions.

The other thing is it became very apparent there had been no one representing the rural residents or the farmers over in the large basin—500,000-acre basin, 50,000 acres of irrigated ag, over 10,000 rural residents, and no one representing us as an entity. So nothing had basically been done forever. All the sources of water that were available in the area had been gobbled up by the cities. Why is that? Because they were organized and, I like to say, they had a seat at the table.

So one of the things that came out of this group is we actually came together and we really now are on the same page. We talk at the same meetings. We text each other. My former opponent is now on my speed dial on my cellphone.

UNIDENTIFIED: Your Facebook friend.

MR. REAUGH: Well, I'm a little old for that.

So we came up with a radical idea. I mean, this is really novel. We wanted to create a water district. You know, there's only 400 water districts in California. We're one of the largest agricultural areas without a water district. So this was really a strange idea.

The question that came up is, What kind of a water district? And again, there's two fundamental types of water districts: one is based on land ownership, and one is based on a "one person, one vote." And that was part of the discussions between our two groups is how do you balance the interests of those two things? And when you talk about landowner-based voting and other things, there are some issues with that. People will bring up issues of equal protection; it can disenfranchise registered voters; large landowners can dominate. So if you own 40,000 acres and I'm on my one-acre parcel, how do I compete against the 40,000-acre person?

But landownership voting is in the California Water Code through a California water district, and it's actually gone to the U.S. Supreme Court twice and has been upheld.

But the "one person, one vote" also has some issues as well. It can disenfranchise nonresident landowners. In our proposed basin, our largest landowner owns 40,000 acres, but she's a lady that lives in San Diego and has a trust, and she would have no vote. I know another farmer who has been in the

community for many years. He farms hundreds of acres, employs lots of people, has a large winery, but he happens to live outside our proposed district. That person would have no vote. And it could also be disproportional, you know. Five renters can have five votes, and somebody owning 5,000 acres gets one vote. So there's some issues with both. And these are all legitimate issues.

One of the things as our two groups got together and said was, *Okay, how can we solve these basic fundamental issues, these competing interests?* And what we came up with is we've proposed creating a water district, an off-the-shelf California water district with a hybrid board of directors and a unique voting structure. And because of that, it's not a standard California water district; it requires special legislation. There's a bill being moved forward by Assemblyman Achadjian, talking about special legislation. And the only change in this special legislation is this board of director votes. Otherwise, everything is part of California code.

So what is the unique structure? It's a nine-member board of directors. Three directors would be elected by registered voters, and six directors would be elected by landowner-based voting. Because of some concerns, we've segmented the six landowner-based voting into three classes. We call them small, medium, and large. We were really inspirational that day. But what we really did is, the issue is, if you've got ten acres, how are you going to compete with the 40,000-acre person? So the directors would be split into those three classes. The large landowners compete against the large landowners, the medium landowners compete again the medium landowners, and the small compete against. And that's the basis of our legislation.

We feel this is the best solution for our current situation in our demographics. Many counties in California have kind of emerged from a rural area to an urban area, and they've actually changed the structure of their water districts, going from landowner-based voting to residential voting.

So let me get back to my original question: What does a bunch of farmers and rural residents in Paso Robles trying to create a water district have to do with sustainable winegrowing? Well, I think the answer to that is obvious: everything.

This is where sustainability has to start in our community. How can we support the three legs of sustainability if we can't manage our own groundwater basin?

Right now there is no management of our groundwater basin. We hear very clear signals coming from Sacramento that you folks would prefer to have local people solve and work on their groundwater issues, and that's what we're trying to do. We're trying to preserve and protect our basin. It's clearly our top priority. And we feel our proposed special legislation is the key to help the rural residents and the farmers manage the Paso Robles groundwater basin locally.

So thank you very much for your attention.

ASSEMBLYMEMBER CHESBRO: Well, thank you very much, Mr. Reaugh. I'm able to make a little more sense of it after…I've not been able to quite figure it out from afar, reading the news articles.

MR. REAUGH: Well, it's tough to distill this into seven minutes. And I apologize for talking very fast.

ASSEMBLYMEMBER CHESBRO: And I have to say, as an annual visitor to Cayucos, I've been amazed every year seeing the expansion of the vineyards. It's an enjoyable place to visit and taste wine.

MR. REAUGH: Well, I hope you stopped in Paso on your way to Cayucos.

ASSEMBLYMEMBER CHESBRO: Of course. That was the point. Yes, absolutely.

We appreciate your presentations, all three of you. Thanks.

Next I'm going to call up John Williams with Frog's Leap Winery in Napa Valley and Steve Smit with Constellation Wines US. And it's good to see you again, John.

MR. JOHN WILLIAMS: How are you?

ASSEMBLYMEMBER CHESBRO: Good. How are you?

MR. WILLIAMS: I brought notes so I wouldn't get lost.

ASSEMBLYMEMBER CHESBRO: You want to start out, John?

MR. WILLIAMS: Yes, please.

Well, thanks. Thanks to the committee for having me today. And also, thanks to the Wine Institute for inviting me. Their Sustainable Winegrowing Alliance has really been fantastic.

ASSEMBLYMEMBER CHESBRO: I'm going to use that moment to acknowledge the presence of Bobby Cook in the room.

Go ahead.

MR. WILLIAMS: As Wes mentioned, I'm the owner and winemaker of Frog's Leap Winery. Just to give you some perspective, we farm approximately 200 acres of grapes in the Rutherford and Saint Helena appellation of the Napa Valley. Two hundred acres of grapes gives you about 1,000 tons of grapes. That's 50-60 thousand cases of wine. We have about 50 employees, about $15 million in sales. So a nice small family business—and I'm glad to have some of my family here today: my daughter Catherine, who many of you recognize around the Capitol.

We're really proud of our efforts with respect to social, environmental, and all the sustainability stuff. Among other things, we were the first organic vineyards in the Napa Valley. We've now been certified "organically grown" for 25 years. We're also the first LEED-certified building in the entire California wine industry. I'm very proud of that. Among the very first to use photovoltaic systems to provide all of our electrical needs. Also, I think one of the first to use ground-source heating and cooling for our buildings. And I'm obviously personally proud of being among those who initiated the Rutherford Dust river restoration program, which this body has recognized, and thank you very much for that. Sorry I didn't get to make the ceremony. I heard it was a good time.

But that's not why I'm here today. As drought conditions persist over the state, attention has been rightly focused on how we use water in our North Coast vineyards. You've heard, and will hear, testimony on ideas and initiatives to store water, divert water, share water, conserve water. But what if we used no water for irrigation at all? Frog's Leap is one of a handful of vineyards in the North Coast who dry-farms their vineyards; meaning, we use no irrigation water to establish or grow our vines.

Now, that seems like a radical concept. Please consider that for more than 100 years, every grape grown in the Napa Valley was dry-farmed. Indeed, all the great and fundamental wines that establish the reputation of the Napa Valley—the great old Inglenooks and B&Bs, the Stags' Leap that won the Paris tasting; I know, I was the only employee there at the time; Chateau Montelena, all the great Robert

Mondavi wines—each and every one of these wines was from a dry-farmed vineyard.

Irrigation, of course, is not allowed in most other fine winegrowing regions of the world, including France, Germany, Italy, Spain, and Portugal, even though many of these regions have similar or lower annual rainfall and more challenging slopes, soils, and aspects than we encounter here in many of our growing regions of California. I sometimes hear that, *Oh, sure, you can dry-farm your vineyards because your vineyards are on*—whatever the valley floor. But I've nine different vineyards in many different places in the valley, and we dry-farm each and every one of them. But moreover, I've been to the Douro Valley in Portugal. If you've ever been, it's insane, you know? I've been to Rioja, which gets eight inches of rain a year. I've been to Châteauneuf-du-Pape, where there's no soil; just cobblestones. If you've ever seen it, it's the most extraordinary thing in the world. And I've been to Jerez, the Spanish region in France where they make sherry, where there's precious little rainfall and, in many cases, no soil at all. And all these places are successfully and profitably dry-farmed.

So, what's the question? Drip irrigation was not introduced into the Napa Valley until 1975 by the Beckstoffer farming group. It became popular because it could boost yields, and it took off. We believe—although it's never been conclusively linked—the fact that the roots came up to meet this irrigation water was what caused the phylloxera crisis in the late '80s and '90s which required relief from the state to replant. Unfortunately, two-thirds of the vineyards of Napa had to be replanted, and even more unfortunately, they were all planted on less drought-resistant rootstocks. So the result is now there are only a handful of North Coast vineyards still dry-farmed, and most vineyardists would testify that it is indeed impossible to grow grapes in the Napa Valley without irrigation.

Most of us who practice dry-farming don't do it to save water. In fact, if we thought we could grow better grapes, we'd pour the water on, okay? We don't irrigate because dry-farming is closely associated with wine quality. Grapes grown in deep connection with the soil have greater balance, more restraint, and a much greater capacity to reflect "terroir"—the Holy Grail of winemaking. Other advantages, of course, of dry-farming include lower costs of operation; reduced

inputs, including herbicides and fertilizers; improved vine health; and disease resistance and greater vine longevity and more stable yields.

It's important to state that dry-farming is not a noun; it's a verb. It's a system of farming worked out over decades and handed down from farmer to farmer that takes great care in selecting the right cultivar and rootstock for the site. To prepare the soil to receive the vine, and to prepare the soil to increase the water quality capacity of the soil by developing humus. By encouraging deep rooting, by field budding, and the wisdom of proper orientation trellising and spacing of the wines. All of these things are part of setting up a vineyard to be dry-farmed. It takes a little bit longer to establish a dry-farm vineyard, but it pays off in longevity.

Well, unfortunately, the knowledge about how to dry-farm successfully in the wine regions of California is slowly but surely being lost, and now it's pretty much accepted that its methods are wishful-thinking and relics of the past. But I think we can use this time of shorter rainfall to perhaps open that discussion and revive this carefully tested method. If nothing else, it would be helpful to those of us who dry-farm to know that there was a research point of view that established some of the science behind this, behind our success. We know this works inherently. We know the methods that need to go through it. But no one has studied this at the university. No one's promoted it at the university or through any of our ag extension agents or so on. Perhaps with that knowledge it would be useful even to those who don't irrigate. If we use UC extensions' estimate that grape vines in the Napa Valley need about 100 gallons of water per vine—and let's say there are 640 vines per acre—if, say, just the 30,000…let's assume that there are 30,000 acres in Napa that are irrigated. As you can do the math there, that's 2 billion gallons of water. Well, even if we could save half of that—you know, have a billion here, a billion there—pretty soon we're talking about some water, you know? And so, I think it would be useful to do that.

So please understand it's not my testimony that California farmers, including vineyards, are water wasters or are carelessly farming, but I do think that some time-honored ways of farming, like dry-farming, where water was harder

to access and distribute, could be profitably revisited and encouraged—and probably should be.

Thank you.

ASSEMBLYMEMBER CHESBRO: Thanks. In part inspired by you, a few weeks ago I had some grape growers in my office and asked them about dry farming and the drought—and I'm interested in your response to this—but they said that the problem is that at some point, the soil dries out to the point that there's not…and the water table has dropped enough that dry-farmed grapes get into trouble. So if this drought continues at the extreme level that it has been, is that a risk of dry-farming? And it's not a critical question because I like what you do.

MR. WILLIAMS: No, no. Believe me, when we pioneered organic farming twenty-five years ago, I heard all these same sort of things, right? Everyone had a reason why this wouldn't work. And yet, look at the history of this. And also, I think a good thing we could do is just look at how the winegrowing regions in other parts of the world, who get very minimal …

ASSEMBLYMEMBER CHESBRO: That's a compelling argument.

MR. WILLIAMS: It's a fairly compelling argument. But what you have to think about is the soil—and if I'm talking too much, please say so. The soil is like a teacup, okay? The first thing that's going to happen is you're going to saturate the soil. And then the runoff is what allows us to divert and store water and irrigate, and so on and so forth. So the first water's going to go to fill the soil. We've filled the soil for this year, by the way, and so, there's no threat to anyone who dry-farms—in my neck of the woods anyway now. I understand there are different parts where we grow grapes.

ASSEMBLYMEMBER CHESBRO: And they weren't from Napa.

MR. WILLIAMS: Well, I understand. But we have folks here from Paso Robles, and I don't know what the situation is there. Although, I know there are dry-farm vineyards down there, so someone must know how to do it.

In fact, I think it's kind of like that ice thing: it's a little counterintuitive. Your absolute best protection during a drought is to have no irrigation and to have your roots established deeply in the ground. The vine, then, will use its natural

wisdom to slow and moderate its growth if drought becomes persistent, okay? If you have a root ball the size of a basketball waiting for your weekly allocation of water, it has no chance to explore the soil, and the vines become dumb. They lose their innate ability to slow their growth, measure their crop, and so on. So I believe if drought becomes persistent, the methods of dry-farming, which encourage deep rooting, will become even more important than they are today. So it's a bit counterintuitive.

ASSEMBLYMEMBER CHESBRO: Thank you. Other questions or comments?

Senator Evans?

SENATOR EVANS: That's an excellent point, and I think that's one of the focuses of our discussion today. But I have just a question about how dry-farming is defined. You heard the testimony earlier from Mendocino folks about the use of water for frost protection. So does dry-farming include water for frost protection or not?

MR. WILLIAMS: No. We're strictly talking about crop irrigation.

SENATOR EVANS: So you could use water for frost protection and still be dry-farming.

MR. WILLIAMS: Yes. And it wouldn't be the first dry farmer who thought that an extra hour of frost protection didn't hurt them in the springtime. We're more than glad to cheat if we think it would be helpful.

ASSEMBLYMEMBER CHESBRO: Ms. Eggman?

ASSEMBLYMEMBER SUSAN TALAMANTES EGGMAN: Thank you. Thank you for your testimony.

I was going to ask what are some of the resistance to doing this, but I think Wes has kind of covered it. It's the way we've always done it, with irrigation, and so that's the way we do it.

Is there a way besides saving you the cost of irrigation water to incentivize people to do more dry-farming?

MR. WILLIAMS: Wine quality. And that's what advanced, of course, organic farming. We were never going to win the argument of saving earth and hugging trees and wearing tie-dyed. What we did was we said this was

fundamental to wine quality. It became popular in the press. And in fact, if you read the subtext of the wine _____, I guess you'd say, dry-farming is suddenly getting exposed just like organic and biodynamic farming did twenty years ago. So I think wine quality will eventually be a part of this. I could go on forever about that, but that's perhaps another session.

ASSEMBLYMEMBER EGGMAN: Thank you very much.

ASSEMBLYMEMBER CHESBRO: Any other comments or questions from committee members?

Ms. Yamada.

ASSEMBLYMEMBER YAMADA: I was just going to mention that I think wine contributes to longevity, right? Drink more wine.

ASSEMBLYMEMBER EGGMAN: I second that.

MR. WILLIAMS: Actually, I'm 150, so I'm looking good.

ASSEMBLYMEMBER CHESBRO: Okay. Well, next we're going to hear from Steve Smit, who's with Constellation Wines.

MR. STEVE SMIT: Good afternoon, everybody. And thank you for holding these hearings on sustainable winegrowing.

My name's Steve Smit. I've vice president and general manager on the Central Coast for Constellation Brands. And I'm also the chairman of the California Sustainable Winegrowing Alliance. It's a pleasure to be sitting here, as an opposite here, for also a small company, but one of the world's leading premium brands.

UNIDENTIFIED: Family-owned.

MR. SMIT: Family-owned, exactly. With a number of brands: Robert Mondavi, Simi, Clos du Bois, Estancia, Wild Horse; the list goes on. We have about 1,500 employees, over 12 wineries, and about 13,000 acres in most premium areas in California. So the subject is, of course, extremely important to us. The whole subject of environmental sustainability is important to Constellation Brands. It's part of our, kind of, three legs of community and social giving as well.

We were involved from the inception on developing this code of sustainable standards. It's been fifteen years now, or something like that, we've had this thing

in there, and it's been important for us. And so, having a hearing like this, it's important to be here, and I appreciate your time here because it's something that's not…it's never going to be done. We have to talk about continuous improvement and challenge each other and keep on going here.

So of course, we're here for the drought, and I don't think I need to tell you that we're in an emergency here. I think, though, we need to point out that the wine industry has been working, has been focused, I think, on water use for quite a while. Water use efficiency in the wineries and the vineyards has been incorporated into most wineries. Again, it's an item of continuous improvement. We're continuing to work on this.

I think wineries across the state, including Constellation, have done a number of measures that I think are important, including, for example, meters and developing metrics of water use. I think that people did not ever really think about it when it was this short. So I think we're lucky that we've been looking at it for this amount of time to kind of cover this. Using low-flow, high-pressure tank washers—small examples like that. Reusing water in barrel washing. And of course, reusing winery wastewater in the vineyards. Good examples there. In the vineyards, really looking at water use of the vine in order to understand what the water requirements are instead of just turning on the drip irrigation system. And, of course, using drip systems across.

So even though I think we've done a lot, continuous improvement means we need to keep on working on this. Across the state I think we need to…do you have collaborative efforts that we're working on with the industry, with the government? I think you all know of many, but I think there are even more small groups that are working on this, that are taking this to heart.

I think in wineries, with groups looking at, again, measuring water, developing metrics in the vineyards, not only understanding how much the vine is using but predicting how much the vine is going to need and predicting irrigation needs—we're working with NASA; we're working with the California Irrigation Management Systems—are all examples of this thing.

So in closing, I reiterate how Constellation feels and the CSWA feel. Appreciate your support and approval in holding these hearings.

ASSEMBLYMEMBER CHESBRO: Thank you for sharing your testimony and your information today. We're pleased to have you both with us.

Any comments or questions from members?

If not, thanks very much. Thanks for all the presentations from the first panel.

Our next panel—and maybe I'll call them out and then you can…there's only four, so I can call you all at once. There are four chairs up here. Chris Savage of E. & J. Gallo Winery; Bill Cooper of Cooper-Garrod Estate Vineyards; Christy Pestoni Abreu, Pestoni Family Winery; and Matt Belair, Delicato Family Vineyards. So please come on forward, and I'll begin my comments while you're coming forward.

This panel will discuss the wine industry's energy efficiency efforts and their success at greenhouse gas reduction efforts. California's winegrape growers and vintners have become leaders in the fight against global climate change. According to a study conducted by the Wine Institute, over the last four years California wineries have eliminated 30,371 tons of carbon dioxide emissions, resulting in more than 55 million kilowatt hours in energy savings; as a result, 359 energy efficiency and alternative energy projects statewide. This is the equivalent of removing 4,300 cars from the road for one year. The industry has also been a leader in reducing landfill gases by composting and using compost, as well as producing biogas to create clean energy.

So we will begin with Chris Savage with Gallo.

MR. CHRIS SAVAGE: Thank you, Mr. Chesbro, members of the committee. We appreciate the time. I'm Chris Savage, as mentioned. My day job is senior director of Global Environmental Affairs for E. & J. Gallo Winery. Basically, my department and the folks that work within the group look after regulatory compliance, the environmental components of the company, as well as the sustainability. As Mr. Chesbro knows, we have a very large composting operation down in our Fresno facility that's been highly successful; no small part to some of your support of the earth, so we greatly appreciate that.

ASSEMBLYMEMBER CHESBRO: I was wishing I'd said this in your introduction, but the relationship with Gallo goes back to 1973 when we founded

the Arcata Recycling Center and had to find some place to ship our recycled glass to. We shipped gondola cars full of glass to Modesto, where it was made into new wine bottles. Anyway, that was a business relationship long before I got into politics, but was also a mutual commitment to sustainability way back then.

MR. SAVAGE: Fabulous. In the spirit of *Six Degrees of Separation*—I'm a Humboldt State grad; so there you go. It all kind of ties back together.

ASSEMBLYMEMBER CHESBRO: You know of which I speak.

MR. SAVAGE: I know very clearly what you speak.

Part of my side jobs—I guess my night duties—I'm also a board member for the California Sustainable Winegrowing Alliance, which I've been involved with, more or less, since the inception of the program, along with Steve Smit and others. It's been a very highly successful group. I also chair the Environmental Working Group for Wine Institute. And then, I also chair a couple of international committees looking at sustainability and environmental trade issues on a global basis for organizations like FIVS and others which look after, kind of, the global wine sector. Sometimes I wonder how I have time to do my day job. I think my boss would probably echo that from time to time.

I think, as you've heard, sustainability is really a cornerstone of the industry. We've been at it for a very long time. It really, in my view, is one of the main things that helps contribute to the major economic engine in the state, which is over $61 billion when you look at all of the roll-up(?) and associated industries that we have with us. It is a critical component to what we do.

As you've seen, and will continue to see, mainly the businesses in the wine industry are family-owned businesses. Being good stewards of the land and good neighbors is really a cornerstone, I think, of their business philosophy, and our sustainability program really, I think, reflects that quite well. It is a framework for, really, most of our wineries and vineyards in the state of California, and it really does help us make long-term business planning decisions.

As most of you know who've been to our operations, or others that you're going to hear from today—really, this is not just about day-to-day business planning; this is generational planning. Because it's not just about how we're going to make money tomorrow or turn a profit next quarter. It's about how the

owners of these businesses are going to pass these businesses on to their kids and their kids and so on and so on. In many cases, we're in our second, third, and fourth generation, in some cases fifth generation ownership of businesses in California, and I think that sustainability is really key to that.

And of course, as you've heard, the Code of Sustainable Winegrowing Practices is really the centerpiece of that program. It has over 200 practices that focus on everything from environmentally preferred purchasing to things that we're here to talk about today, which is energy and water management—which, as you know, are integrally tied. Integrated pest management. Other water applications that really, I think, provide guidance and best practices for the industry as a whole. The third version of that booklet was issued just last year, so we've been at this for, as Steve said, nearly 15 years now. Hard to believe. I think with each successful iteration of the book it has improved greatly, because as the best practices improve, we can represent the most modern-thinking science associated with it. And I think it really has driven us down the path to some very successful outcomes; many of which you mentioned in your introductions, Mr. Chesbro.

I will say that one of the biggest things I think we've accomplished in the last couple of years is started to really focus on metrics within the industry. And the Code of Practice and the CSWA program have really led that. We have developed a set of metrics within the industry that allow us to track energy and water usage very carefully, and not just track it within your own business but compare your performance against those of others within the industry that utilize the program. And I think if you look at what's going to drive activity beyond just the great science—and, as many people say, never let a crisis go to waste, right? because it always drives change. This is one of those opportunities. The other thing that drives change within our industry is competition. No one likes to be seen as the worst. They always want to be seen as the best. So the metrics, I think, are going to go a tremendous distance in getting us to where we need to be to continue to move the mark.

I want to talk about a couple of other programs we've initiated in the last couple of years that directly relate to energy uses and greenhouse gas reduction, which I know is what we're here to talk about. One is we've just recently

completed a life-cycle assessment project, or LCA, for the industry. Basically, it's looking at everything from the grape growing all the way out to the retail gate effectively. So it takes a look at the full environmental impact, energy impact, water impact of that whole process. And again, as it ties back to the metrics I mentioned earlier, when you have tools in place that allow you to look at your business with that level of granularity, that's what drives change. And we're seeing some of that change take place for us right now.

I think, also, as you look at the need to really properly analyze and evaluate the greenhouse gas emissions, the need for that comes from two fronts. One is, obviously, energy costs continue to be an issue for us, so we're looking at reducing our energy consumption. But quite frankly, our consumers and our retailers care about it as well, and we want to make sure that we're in a good position to speak to that.

And then to delve even deeper into the science, we've also helped sponsor and adapt the denitrification and decomposition model for the wine and grape industry. And we just call that DNDC for short because no one wants to say denitrification and decomposition too many times. Basically, what that has allowed us to do, that model, is we can now take a look at our vineyards and we can determine the actual amount of sequestration of greenhouse gas emissions and actual emissions that come from those sources. That's, again, a level of scientific granularity that we have not been able to accomplish up until recently.

So when you take everything I think CSWA has done on a whole, it is taking the most recent thinking and value-added science and driving that towards a successful program implementation that allows all wineries and growers within the state, no matter what their size, no matter what they produce, to look at their business in a meaningful way and trying to drive real meaningful change. It's showing in the bottom lines of these companies as well, because when you can reduce your energy consumption, it has a direct effect on greenhouse gas emissions. It reduces your bottom-line costs. When you can reduce your water usage, it puts you in a much better position, particularly in years like we're facing today, that you're not having to be so heavily reliant on either municipal supplies

or, in a lot of cases, groundwater supplies, which, as you've heard in the previous two panels, is an area of great concern for us and will continue to be.

Before I relinquish control of the mike, I probably would be a little remiss, and my owners would not be happy, if I didn't comment at least on a few things that Gallo specifically was doing. We've been engaged in this, really, for the last 80 years in one form or fashion, although we probably didn't call it sustainability back then. But we have actively partnered with not only others in the industry but also with suppliers like Pacific Gas & Electric and others to implement across-the-board energy-saving projects related to our ammonia compressor systems, such you are able to produce our cooling and chilling systems at the most efficient level possible. That has had a huge impact on us. Moving production to off-season—or, I'm sorry, off-peak demand is a huge benefit to PG&E as well as to us. We have implemented a number of motor changes throughout the organization. I'm fairly deep in the organization right now, so I apologize. But you have to understand, to really effect change, it's not just always about the big projects. Sometimes it's about the accumulation of small projects that make the biggest level of difference.

And then I'll maybe speak to something that Ms. Olsen knows quite well. Gallo is also a holder of the biggest glass manufacturing facility in the world. So we do nothing on a small scale, which, from my world, is a little unfortunate at times because everything has to have a big impact.

But our furnaces, which are tremendous energy consumers—and we're part of the AB 32 program for the state and so on—we have actively taken to rebuild these furnaces, which have to be done about every seven years, with the most energy-efficient process out there. That has resulted in about an 8 percent reduction in our energy consumption, just from our most recent furnace rebuild, and we have three more to go. Eight percent on a facility of our size is enormous. It is the size of a small city, effectively.

So we're seeing big changes in the industry from that perspective, and we're going to, I think, continue to see the benefits from that.

ASSEMBLYMEMBER CHESBRO: You missed my cue on how much less energy it takes to melt recycled glass cullet than to make a glass from raw materials.

MR. SAVAGE: Fair point, and I was going to touch on that at the very end, so thanks for bringing that back up. But you're absolutely correct. Taking cullet is one of the big things that we can do to reduce energy consumption.

So those are just a few examples of what we've done. We're incredibly proud to be associated with Wine Institute and the CSWA program. We're happy to be in front of you, and we thank you for taking the time to listen to us and look forward to speaking more at the end of the day.

ASSEMBLYMEMBER CHESBRO: Ms. Yamada.

ASSEMBLYMEMBER YAMADA: I just wanted to say—I wanted to apologize. I'm going to have to run out for a few minutes. With any luck, I'll be back at 4:30. So I just wanted to explain my absence, but I shall return. Thank you. Good luck.

ASSEMBLYMEMBER CHESBRO: Any other comments or questions?

Thank you very much, Mr. Savage. Nice to see a fellow lumberjack.

Next we'll call on Bill Cooper, Cooper-Garrod Estate Vineyards. Welcome.

MR. BILL COOPER: Thank you, Mr. Chairman. If I may, it's Garrod [correct pronunciation]. Garrod Road at University of California, Davis. The Garrod family started—my maternal side—farming here in 1893 prunes and apricots for the first 70 years, transitioning through riding stables into vineyards, which was actually my dad's retirement project. He was a research test pilot at NASA. We were in the hills above Saratoga in the Santa Cruz Mountains.

But sitting here next to Chris brings back great memories. It was two years ago I left the CSWA board after nine years, and putting Cooper-Garrod next to Gallo—we have 28 acres of vineyard. Nobody knows how many they have. I'm always, always impressed by the logistics, the engineering, the insight that Chris brings to problems because he looks at everything from a global perspective, and we're sitting here dealing on our little …

ASSEMBLYMEMBER CHESBRO: But to quote the previous panel, you're both family-owned.

MR. COOPER: Both family-owned, right.

We made our transition to organic. We started in 2006, so we started finishing it in '09 and finally in '11. And this has had one very positive effect. The first thing my cousin learned was when you don't put Roundup down underneath the vineyard rows, you don't have to drive the tractor through. So we're saving energy there. A flipside of sustainability—we're in the hills—our primary concern is erosion. So there's no more disking of the hills; we just let the roots stay there. But we do have to go through the vineyards more than once because we have to mow it to keep it down. This year that's not a problem. The grass didn't even start to grow until last month. I don't know if we'll have to go through at all. But these things are little things that add up.

The sustainable winegrowing program, of which there are several in the state, what I really like about it is that it advocates continual change, continual improvement. When you go through the self-assessment—you don't have to be certified; any farmer, any grower, or winemaker can go through this, and you heard about the best management practices that are there—you pick and choose. You find out what it is that fits with what your situation is, what drives you and says: *Oh yeah, I'm here*—and I'm doing this online now*;* we used to have to go and show up and do this—*but if I did this, I could improve my score.* And you can just find lots of examples of things to do. Water and energy are some of the biggest ones, because the more water you save, then you're saving 20 percent…20 percent of the cost of water is energy. So all those things come up.

You have to have numbers, and this is back to the data that Chris mentioned, and this is something that's been driven into us in the CSWA program from the very beginning by our very first consultant. He said, *You've got to get the data. You can't manage anything without the data.* And you begin to understand that.

The other thing that comes out is when you're talking with your neighbors—hey, the tide is going to rise, everybody's going to be improving unless you're anchored in the way you used to do it forty years ago. There's a great deal of expertise that has been developed through the universities and through the neighbors and through the Farm Bureau and all these organizations. The trick is

getting it out and getting people to have time…to take time away from the crises of the day, because every day something's happening you have to get done. With the program like CSWA, then you're able to plan ahead because you take a few hours at the beginning of the year—*Okay, this is what I want to do; this is what this little self-assessment did for me*.

So in that context, what have we been doing? We've changed our composting from our riding stables, and now it is compost at organic standards. We've put it under the vineyard rows for suppression of weeds instead of the others. Cooling at night—we turn off the chiller; it's on a time control. So the only time it runs is in the evenings. An insulated building in the evening when electricity rates are down. And so, we let everybody else use the power during the day. We put in solar panels in 2005. I'll note that in 2003 there were two wineries with solar panels. The last numbers that anybody was able to find are 2010. There was a 50-fold increase in that seven years. PG&E is, I think, very…one, I know they're very supportive of what we're doing, and I also understand they're very appreciative of what the wine industry is doing in terms of getting out and doing the sort of programs that you've heard about.

Inside the winery, it takes more than a year to start doing things. Energy efficiency—we're now just getting into replacing CFLs with LEDs, with the new wiring project that we have. You've heard how many people…other people. We have five. Composting hazardous material; getting the stuff out. It's been collecting in the shed, in the back. One other thing—inventory it. When you start inventorying, you see the same stuff there year after year after year. Then you say, *Maybe we can move this stuff on*.

In conversation with the neighboring winery the other day—he's very concerned about water. We all dry-farm in the Santa Cruz Mountains because you can't pump the water that high. He's very concerned because we've only had 7 inches of rain. He doesn't know if he's going to buy barrels this year. Ridge—in '07 or '08, also above the waterline, but there's no pumping. They're all dependent upon wells, worried about drought, from the '07 drought where we had 15 inches of rain and put in drip irrigation just in case. We put it in as well in the subsequent years, and we have yet to decide if this is the…you know, what are we

going to do? I think the industry, from my perspective, we're very much in flux, trying to figure out what's going to happen and what we can do to see ourselves through it and for what's coming.

But those are some of the examples I think, I hope, will describe for you as to what little wineries are doing to make a continual improvement in how we grow grapes and produce wine for you.

ASSEMBLYMEMBER CHESBRO: Thank you very much, Mr. Cooper. And it's pretty obvious from everything we've heard so far how applicable—not every one of the principles but in different combinations—these things are from the very smallest to the largest producers. So that's a point that I'm taking away that I think is a very important one.

Thanks.

Next we have Christy Pestoni Abreu, Pestoni Family Winery.

MS. CHRISTY PESTONI ABREU: I'm here from the wine standpoint today, I guess.

Well, my family—I'm going to trump you on this—because my grandpa came, and great-grandfather, in 1886 and began making wine in 1892. From Switzerland. He had a little winery at the base of El Caño, which is now the water supply for the city of St. Helena. My family got out of the wine business during Prohibition and began doing contract farming work, which then led to my dad, when he was about 24, starting raising hogs. And if you ever hear the story about how people got into waste management, it usually has a hog behind it.

Anyway, in St. Helena, the upper end of Napa Valley, he began raising hogs, and he created a route where he picked up from the local hospital, the veterans' home, bakery, grocery store, and pretty soon he had a route. And by 1963, he had gone to the county of Napa and received a franchise agreement to haul commercial waste to the local landfill. And as he was hauling it to the local landfill, the guys that owned the landfill said, *We don't really want to do this anymore*. So by 1966 he also owned the landfill. But so much has happened between now and then.

I think Member Chesbro wanted me to come to talk about composting. One of the first wineries that we began composting with was in 1966, and it was Robert Mondavi Winery, and they came to us and said, *Well, we built this beautiful winery,*

but we don't have anywhere to put the pomace. And so, my father said, *Well, we can pick up the pomace, and we can compost it. Maybe I'll feed it to my pigs.* We still had some pigs. In any event, I think the pigs got drunk, and my dad got smarter, and he started composting it with a loader. And John Williams can attest to this because he might have been a neighbor then—I'm not sure—but eventually we got better at composting and went from a loader to a SCARAB.

In the early '90s we had a water problem. We had a big pond, but the pond got anaerobic because the seeds were going crazy in the pond. And so, we had this BOD problem, and our neighbors formed a group called Citizens for Environmental Protection—which we thought that was us but we were wrong—so we had to get better at composting.

We hired an expert composter from Canton, Massachusetts. His name is Eliot Epstein. I don't even know if he's alive anymore, but he's probably 99 years old. Anyway, he said, *You need to, because of the acidicness of the grape pomace, you need to add some other stuff to it, and you don't want to turn it because when you turn it, you throw the odor up in the air, and then it lands in your neighbor's backyard. So we're going to remove that process*. So we went to, over a three-year period, an aerated static pile. At the time, we weren't taking in green waste for the residential sector. We were actually back-hauling rice hulls from the Chico area, and we were mixing that in with our compost, and then we were inverting air using a static pile and then not turning it and then breaking it down and screening it.

That, actually, was kind of a pioneering process. We were noted by the vintners and the grape growers. We were in *National Geographic* and *BioCycle Magazine* for, like, innovative composting efforts, when most of those people that were composting were using a SCARAB in the windrow process. So to date, I think most composters out there are using aerated static pile, and now we're moving into anaerobic digestion to capture the gases and make fuel and whatnot.

So I guess what I want to say is that we've come a long way. We're actually a partner with many of the wineries in the upper valley community. We probably compost 120 wineries' materials. Some of those wineries compost their own, if they have the luxury to have the property to do it and the equipment. But many of the wineries, because it's a compact area, the land is too valuable to compost it

themselves. We probably send about 80 percent of the composted product right back into the vineyard, and this year we're completely sold out of our compost product. And everything is certified "organic" with the Organic Material Institute and also the CDFA.

One of the other things that I do on a regular basis is waste audits, which you heard a lot about the sustainability and emissions calculations. Robert Mondavi is one of those reports that I do monthly. They get a report about every activity that engages our company, from compost to recycling, to cardboard, to food waste collection. I think that's part of their global "getting to zero waste" program. I know that that's actually very common now, and we're moving into a need for new computer systems that tracks all this information.

One of the other things that I just wanted to mention as an independent hauler and moving into the future—by 2020 we will have avoided 103,862 metric tons of CO_2 just by those activities. And we have on the forefront a methane gas collection program. That actually should have been turned on a year ago, but we ran into PG&E issues—but we're close. And then, we also have a wood biomass plant permitted for both ends of Napa County which will take the grape cuttings every season, all new replanted wood material, and we'll be producing anywhere from 1 to 3 megawatts of power just from that program. And then the residual matter is the biochar, which then has carbon sequester and can go back into the vineyard or be added into compost. So I think you'll be seeing, actually, quite a few more of these facilities statewide. I think the Governor wants to see 1,200. Maybe not exactly that kind, but renewable green power energy programs.

I also sit on the Sustainable Napa County Committee, which is an advocacy group that works with the wine industry, all organizations within Napa County, and nonprofits that need help with energy conservation, water conservation—whatever it is that they need help. This is an independent group. And then, I also sit on the California recycling company over here in Sacramento. An advocacy group, too.

So I think I've pretty much met everybody here at some point. More recently a few of you.

Anyway, any questions?

ASSEMBLYMEMBER CHESBRO: Well, thank you very much. I hope the hearing gets over before people get tired of my ancient stories, but I will say that my first contact with the Pestoni family was when the then-state senator called up a member of the Integrated Waste Management Board—me—and said, *I've got these constituents*—and by the way, he claimed to have gotten his start in life as a teenager slopping those pigs that you were talking about, and he's now our congressman, or the congressman for Napa.

MS. ABREU: That's right.

ASSEMBLYMEMBER CHESBRO: But in any case, we were able to…really, one of the first examples of the newly created Integrated Waste Management Board working with a composter to help figure out how this could be done in a way that wouldn't have the neighbors up in arms but at the same time accomplish the very important environmental goals that our pre-AB 32 recycling law called for. So really, your family has just been pioneering so many things, and it's really great to have you here. Best regards to your folks.

MS. ABREU: Thank you for including me.

ASSEMBLYMEMBER CHESBRO: Yes, question from Ms. Olsen.

ASSEMBLYMEMBER KRISTIN OLSEN: Yes, impressive pioneering and great story.

As you moved to anaerobic digestion in your company, have you had any struggles or challenges with state agencies in attempting to do that?

MS. ABREU: We have not at this time. We actually have gotten all of our permits. But our partner company is in the south county. Because we're in the north end, anaerobic digestion, at this point, feasibly, from an economic standpoint, doesn't pan out for us. We have 8,000 customers in a very small and rural neighborhood. South of us we partner with a company that services the Napa Greater Area, and they have applied and are actually trying to get some grant funding for the anaerobic digestion program. It may end up that it's also partnered with the Napa Sanitation District, which you will see and hear more about those types of facilities—waste water treatment plants—that will be heading down the same pathway.

ASSEMBLYMEMBER CHESBRO: You did make reference to issues with marketing small producers of electricity—marketing their electricity. That's a challenge.

MS. ABREU: Yes. Well, from what I've learned thus far, it's best if the energy is produced and used onsite. As far as the Clover Flat Landfill goes, they don't use a lot of electricity there. We do have a construction and demolition line, but actually, where our MRF is (which is called a Materials Recovery Facility), where there are recyclables, that facility operates six days a week, ten hours a day. That thing is running. That's actually the place that should be utilizing that power, but it just doesn't always work out that way.

ASSEMBLYMEMBER CHESBRO: Any other questions or comments? If not, we have Matt Belair with Delicato Family Vineyards. Welcome.

MR. MATT BELAIR: Thank you for having me. Again, my name is Matt Belair, and I work for Delicato Family Vineyards. We're relatively young at the table—we've only been in Manteca for 90 years.

ASSEMBLYMEMBER CHESBRO: You don't look that old.

MR. BELAIR: And we are currently the tenth largest winery, to give you a little background.

To touch on Mr. Cooper and Mr. Savage's comments, and the big theme here of small improvements and many small improvements, the first five years that I was at the winery, we started about 32 projects, and by the time we were done in that five years, we did about 9 million kilowatt hours saved. It took some convincing the owners that it actually happened. We had to re-crunch numbers. That is, in fact, our accomplishment. PG&E was kind enough to recognize us for that effort, and then later on in some other capital projects they recognized us again.

But our mantra, really, to go on the sustainable model, is that we are constantly looking at our inefficiencies, constantly taking those audits, those scores, and we're looking for places where we can improve.

So just to give you a couple of examples—we have a preventative maintenance program, and so, we can predict now when equipment will fail, and we can predict when to buy and what equipment to buy to replace that. And more

often than not, when we do replace it, it's saving power. We also look at something simple like your air compressors for all the plant air, just by finding all the leaks and replacing those leaks and removing them. Improve the compressor's efficiency by 30 percent, reducing that power load. And simple lubrication in the alignment of motors can also gain you another drop in efficiency.

And when we talk about refrigeration—Chris was talking about the efficiency gains there. We also looked at it on the other side of, does the wine need to be that cold? After looking at it, we figured out that we could not chill the wine as cold as we were previously, and we were able to avoid having to install a whole other refrigeration unit, just by changing the way we chilled wine.

Also on demand response, we look at cycling the power. Everyone is so committed at the winery that we even have to adjust our thermostats another five degrees when it is those high times. It gets a little toasty, but then we get out and move and get work on the floor.

So again, just to reiterate, it is a team effort. Healthy competition never hurt anyone. And just appreciate being invited to the panel.

ASSEMBLYMEMBER CHESBRO: Thank you very much for your presentation—all of you. Any other discussion or questions from members of the committee?

If not, thanks. Appreciate all of the good work that all of the folks represented here today, but other members of the industry as well, are doing to make industry more sustainable.

So our final panel of the day will focus on winegrowing, ecotourism, and promoting those efforts. Restaurants and wine shops are featuring wines produced from organic grapes using sustainable practices. The growing "farm-to-fork" movement is a natural partner for the environmentally conscious wine industry. Today we will hear from sustainable winery leaders. Unfortunately, our Locavore Restaurant tour had to cancel earlier today due to a family emergency, but the panelists who are with us today are Karissa Kruse, Sonoma County Winegrowers; and Amy Hoopes from Wente Vineyards. So please come forward and join us.

We will begin with Karissa Kruse. Welcome.

MS. KARISSA KRUSE: Hi. Thank you for having me. It's great to be here. I'm really proud to represent the winegrowers and winemakers and vintners of Sonoma County.

About three months ago—gosh, a couple of months ago now, on January 15—we made a very bold commitment as a county to sustainability, and our goal is to be 100 percent sustainable in the next five years as a wine industry. And what that means is both the wineries and winegrowers working together. Why do we do this? Really, we wanted to do our part, as our county, to support what's been sort of California's leadership role in sustainability through the CSWA and other sustainability programs over the past fifteen-plus years. And so, we felt this was a really important initiative for our county, and it's an important initiative when you think about the consumer and the marketplace.

So what does sustainability mean? I think that's probably the hardest question to answer. I've done now a lot of press interviews on this conversation. I talk about it all the time, and I say, *I think sustainability is really complicated and it's very serious, but the results are actually really simple*. It's about, for us, ensuring that we keep agriculture in our county, ensuring that people want to work for us, work with us, live by us. When we talk about having wineries and vineyards, ensuring we have a viable business. In Sonoma County, the wine industry accounts for about 13.4 billion of economic impact, and that's 60 percent—6-0 percent—of our GDP, and we're responsible for one in three jobs.

So when you think about Sonoma County as a whole, sustainability as an initiative, it goes hand-in-hand and is really critical in order to ensure the future of everyone in our community. And so, that was another reason why it was a really important stake for us to put in the ground as a county. The fun marketing part of this is, well, how do you ensure against greenwashing, right? That's the other popular question I've gotten, and that's why we've really been looking to programs like the CSWA and that leadership—Lodi Rules, SIP, others—that have a third-party certification program to come in so that really validates that we're walking the talk. So when we say we're doing something, we're actually having someone come in and validate that that is what we're doing and that we're being mindful of that. So that's part of how we get around that greenwashing aspect.

So why this is important for Sonoma County in addition to the economic impact and viability is that it really was the perfect intersection of who we are and our heritage and our legacy and then what's happening in the marketplace. I'm going to touch on both of those.

Sonoma County—I know there's been a lot of dates thrown around, but our vineyards date back to the early 1800s, with the Russian fur traders and Spanish missionaries establishing the vineyards out on the Fort Ross-Seaview area, which is now a new AVA for us. It has continued to evolve. By definition, sustainability equals multi-generation families being able to farm and make wine in the county. That is, by definition, how we endure and continue. And so, we know for us that putting this commitment out there isn't a new idea. It's not like, okay, now today we're starting to do sustainability. It's really an evolution or continuation of that tradition and heritage.

And so, why now? We've really seen a lot of things going on in the marketplace, and I'm just going to throw out some of the research we've looked at. We had some independent research that one of our larger wineries in our county conducted, and it shows that 66 percent of wine consumers are looking towards and interested in sustainably grown and crafted wines. That's a pretty important thing. It also shows that both on- and off-premise trade accounts …

ASSEMBLYMEMBER CHESBRO: Is that a national score?

MS. KRUSE: That is a national score, mm hm, in the U.S.

ASSEMBLYMEMBER CHESBRO: In Sonoma County that wouldn't be too surprising.

MS. KRUSE: Exactly. Or California even. It's sort of interesting—I'll even jump ahead to this—the National Restaurant Association releases a trend report every year, and for 2014, they said one of the top-five trends for food and beverage was environmentally sustainable food and beverage, and the top trend for the next ten years is sustainability for food and beverage. So once you get to that kind of, I want to say, national scope of the National Restaurant Association, it has folks…it means folks like myself, who was born in South Dakota, and my family from Iowa and Nebraska, are talking about sustainability, which then really talks about how

important it is and how pervasive it is around the entire country. So it's not just something that we enjoy because we know we're …

UNIDENTIFIED: [Inaudible.]

MS. KRUSE: Yes, we're pretty progressive out here, so we know that. But this is something that once it hits a national trend, it's something that everyone is caring about.

ASSEMBLYMEMBER CHESBRO: We like to think it all originates here.

MS. KRUSE: I think inside these rooms we can commit to that, right? Absolutely.

So I think that's an important thing, again, when you look at the trends.

And we also know _____ asked for it, so Wal-Mart has put a stake in the ground and said by 2017—so three years from now—that 70 percent of their products are going to be sustainable that they sell. When you have folks like Wal-Mart—I mean, you think about…you know, sustainability to us really goes hand-in-hand with quality, which is another reason it's such a great fit for Sonoma County and the wines that we make here in California. But I think when you have someone like Wal-Mart saying sustainability is important, that's bringing it to the masses. Certainly, the high-end wine retailers and hotels also think it's important. So I think there's just been this big movement.

One of the things that we have the opportunity to do as California—and we see as part of our accountability in Sonoma County—is to really shape what that means for consumers when it comes to wine and when it comes to agriculture, especially grape growing. And so, by putting the stake in the ground, for us has allowed us to do is really start that conversation on a more national level, start that education, which I think is really critical. We'll be leaning heavily on our friends at the Wine Institute and COG to help us continue carrying those messages for us, but it really does open that door. And I think the biggest surprise out of all of this is we went out there, and we know this was a good thing to do; we know it was the right thing to do; we know it's a continuation of what we've been doing. But it's amazing locally, and this is where we love support from you as our leaders.

For some reason, in the past—it seems like twenty years—agriculture's really kind of gotten a black eye. We've been really defensive, I think, and not been as proactive or on the offense. We're really using this sustainability commitment to go on the offense in Sonoma County and to go on the offense for agriculture. I mean, I consider farmers to be the original environmentalists. So if you think about that—and now we're sometimes at odds with those groups, saying we're trying to preserve the land and here's how we're doing it. And so, I think for us locally it's been an amazing, I want to say, initiative because it's really opened the door to have conversations with the business community, with our local leaders, with our neighbors, on what we're trying to do. So we're excited to have put that stake in the ground.

I can exhaust you, which is why I handed out what is a working document of continuing questions we're trying to answer and what it means and how we do it and what our commitment is to it, but we are very proud to be committed to it. We're proud to be part of the leadership California has established in this area and do our part. We'd love to continue to keep you updated on that and know that our county's near and dear too. Many of you up there.

ASSEMBLYMEMBER CHESBRO: All right, thanks.

MS. KRUSE: Thanks.

ASSEMBLYMEMBER CHESBRO: The 60 percent GDP number—I think you're just talking about the direct wine industry. Are you including visitorship related to that?

MS. KRUSE: We looked at the numbers and we averaged about $1.3 billion in tourism dollars as part of that. That was actually a really low …

ASSEMBLYMEMBER CHESBRO: So it was …

MS. KRUSE: It does include, yes.

ASSEMBLYMEMBER CHESBRO: That's what I was curious about.

MS. KRUSE: It's the impact of the wine industry for the county.

ASSEMBLYMEMBER CHESBRO: Clearly, in our region, and increasingly in many other wine regions, the multiplier effect on hospitality and visitorship and all of those is huge as well.

MS. KRUSE: It's interesting—we used, actually, a very conservative estimate for that. I think Napa uses about 80-90 percent of the tourism is wine-related—grape growing or vineyards. We went down to about 65 percent because we always get into the debate that people love to come to Sonoma County to hike and take advantage of our beautiful landscape, which is absolutely true. I would argue the vineyards are the most beautiful part of the landscape since I own one personally.

ASSEMBLYMEMBER CHESBRO: It's also interconnected.

MS. KRUSE: It's so interconnected, but obviously, folks come and enjoy our landscape and enjoy our wines.

ASSEMBLYMEMBER CHESBRO: I think—and I'm speaking for myself—I think most wine consumers, it's a package; it's all together. I mean, the beauty of the winegrape regions and the hospitality—it's a whole package of experiences that also make you more interested in particular wines because you've been there, you've tasted them, you've been in that environment.

MS. KRUSE: Exactly.

ASSEMBLYMEMBER CHESBRO: Okay. Well, thank you very much.

Finally, we're going to have Amy Hoopes with Wente.

MS. AMY HOOPES: Thank you very much for having the opportunity to come. I agree with you—it's a wonderful opportunity to share the passion of both the winegrowing but then the marketing, the tourism that it really does; the connection; that you continue to grow with consumers not just within California, that I think get it a little bit better, but those beyond throughout the U.S. and then on a global basis.

I've been with the Wente family, working for them, for the past seven years, and before that was actually with the Gallo family for ten. So 17 years in the industry. A very small amount of time. But the Wente family settled in 1883 in the Livermore Valley. With their first vineyards was C.H. Wente planting that original 48 acres. The most interesting part was when I met Carl Wente, fifth generation, who's now our winemaker. He said to me, you know, *I was taught by both my father and my great-grandfather*—his grandfather had already passed—*if you take care of the land, it will always take care of you.* And I think that's the

philosophy that has been passed down not just generation to generation within the Wente family, but as we've heard today from so many of the agricultural businesses, many family-owned and operated.

Again, Wente Vineyards, 131 years. They didn't call it sustainable in the first place but started with 48 acres and now managing well over 3,000; and additionally, another 1,000 acres of what we call Wente land and cattle, where we've got over 100 head of cattle that we're doing grass fed; actually, a grass-fed, wine-finished beef program. Earlier someone mentioned feeding the pomace to the hogs. We actually wine-finish the beef, looking at a very sustainable program that was going on in France. You can come to the restaurant and enjoy that grass-fed, wine-finished beef at the restaurant at Wente Vineyards.

So really, the vision that Carolyn Wente was really instrumental in bringing forward was the understanding that there was clearly a passion and a love of the land and the engagement of agriculture and its importance to the industry; and people beyond the ability to get to the vineyards didn't understand that as well, right? So you get outside of winegrowing regions, even within California, to pockets of places that haven't been to a vineyard or states beyond as you go eastward. You couldn't gain the same emotional connection.

I think you quoted some really great statistics that we talk about all the time—the National Restaurant Association—and that focus on sustainability and where your food sourcing is coming from, as well as beverage programs, Wal-Mart. Target now has put a mandate out similar to say that they will not take product on the shelf that doesn't meet minimum standards for sustainable packaging and processing and ingredients, if you will, for everything from beauty care into the food aisles now. So I think the awareness level has absolutely risen, but it's the commitment and where it starts in the land and how that goes forward. And I wanted to share with you a couple of the things that the family's been doing.

We talk a lot about sustainability, too, and what is that definition, and I was taught very simply with a really great triangle that Karl put up and said, *Well, it's about the three things: it's about the environment, the social, but then also the economic*. So it's about environmentally: if you don't take care of the land, it won't

take care of you for the future. And he's like, *I'm fifth generation and I don't want to be the one to screw this up*, right? It's what he always says.

And then, from a social standpoint—I mean, we're large landowners in the Livermore Valley, with over 3,000 acres there and another almost 1,000 down in Arroyo Seco, Monterey County, and we need to be good neighbors. We're involved not just on the agricultural side of the business, but we have, either as family members or individuals that work for the company, we're also integrated into arts programs locally, giving back to the educational systems in both of those counties, because it's important to us to be a good neighbor so that we can continue to get the support for the agriculture.

And then, of course, the economic side of things, right? You can't stay in business 131 years by not making fiscally responsible, environmentally sustainable decisions that allow you to do that. So being proud to be part of the CCSW and being certified not only for our vineyard holdings but also for our winery operations was really great, and it was followed then by that commitment from the Audubon International certification for our golf course. So not only from a vineyard standpoint are we recognized for sustainable practices—give you a couple of stats on vineyards and operations: On an annual basis, we're recycling over 50,000 pounds of glass, another 50,000 pounds of cardboard. Nearly 10,000 pounds of plastic. On a daily basis we're saving over 500 gallons of water on our bottling line alone because of different adjustments that we've made.

So we're a mid-sized winery. We're not the big guys—the Gallos, the Constellations, or even the Delicato family, for that matter—but we're mid-sized, we would say, but we're still a Top 25 with the production and the usage we have out of that. But again, it's how are we extending that commitment beyond just the vineyards and our operations but into the golf course?

As I said, in 2010 we got certification from the Audubon Society, International certification, for the way that we're running that golf course. Right—interesting. I see the look on your face there. And it has to do with the way that we've planted and designed the course: drought tolerant, if you will; plantings all local; perennial plantings on the property. We have a lot of watershed and natural preserved lands, so we're doing a lot of small animal foresting habitats on the

property. We've an owl box program. We actually integrate the local Livermore Valley schools, and now the Pleasanton schools are asking to come over. And we do environmental hikes through the golf course to educate. We see over a thousand different species on the golf course on any given month, and we record it all and keep it there. So we not only have about 40,000 golfers come through a year, but we see tens of thousands of hikers that want to come through and take the tour and bird watch and look at the habitat that we've created by having that sustainable golf course, which is wonderful.

Then go from the golf course to the restaurants. The NRA is saying it's so important, and the sustainability—really look to do a closed loop there. So we have all local and sustainable producers that we're buying our produce and meats from, but we also have a one-acre organic garden and a fulltime master gardener. So we run an organic garden. It's one acre now. It started out as just, literally, a small strip, because when we opened 27 years ago, a woman, Diane, who's now the master gardener, adorable, said, *Hey, I just want to plant some herbs. Every week when the guy comes to deliver the stuff, it's super-expensive, and I think I can grow them right there by the driveway.* Eric Wente hemmed and hawed and then let her dig it up, and now that's become a full one-acre organic garden that in the high season it's producing and delivering vegetables or herbs full year-round. There's a full planting guide with the chef, and we're using 100 percent of what comes out of the garden, and we're actually using the clippings from the golf course in our composting program that go back on top to the garden. So not just in the vineyards with our pomace and our recycling. We have acres of composting not from just vineyard waste but from the restaurant and all green waste, as well as combining what's coming from the golf course. So again, that closed loop enabling.

And from a tourism standpoint, it's unbelievable. When we do restaurant garden tours, they sell out immediately. People are so excited to come and to learn and to be educated and to see it hands-on. You were saying, to see it, touch it, feel it, gives you a much different engagement with a brand, and that's really what the Wente family, again, is trying to show. They've been committed to the industry, to California, to the Livermore Valley, and winegrowing and grape

growing, but how can we extend that program in a way that allows others to be educated, to learn, and to physically engage?

Which brings me to the last point. We're actually opening in May what we call the Winemaker's Studio. It's focused on a hands-on experiential engagement that will take consumers through all of the sustainable practices that we're doing—growing in the vineyard. Engagements where you get into the vineyard every quarter to understand what's happening and how we're conserving or what practices are going on. And then, at the end they can also blend their own bottle of wine. But again, it's about that education that's so important as well, because I think, as you see on the national basis, these trends are growing and being so much more impactful. Without that educational piece, we'd only be talking to ourselves, and it's the greater good that need to understand and be influenced by that.

ASSEMBLYMEMBER CHESBRO: Okay. Excellent. Very inspiring.

One more ancient story, I promise, and then I'll quit. When I was a member of the National Conference of State Legislators' wine committee, we'd have a discussion at every meeting about which wine region to meet in, and there'd always be someone—and I won't name names, but, you know, I stayed in the Pacific Northwest and I've stayed in the northeast—who would say, *We want to be considered*, and everybody would shout him down and say, *No, no! The only reason I belong to this committee is so I can go to California. We want to meet in California*. I mean, that's a little, small example of what wine is. That's just a limited group who are state legislators, but nonetheless, we got a pretty good group of them every time we met in California.

I really think there's just a symbiotic relationship there; that it connects them—the beauty and culture that we have in this state with the land and the products that the wine industry produces.

Other questions and comments?

Well, this panel has provided us with food for thought. We appreciate yours and all the presentations. We also have a portion on the agenda for public comment, if there's anybody who we missed who would like to have been on the panel or who would like to give us some thoughts.

Yes, come on forward.

You're free to go. Thanks very much.

MR. DANA MERRILL: Real briefly, my name is Dana Merrill. I'm a grape grower from Paso Robles now and farm on the Central Coast. Seventh generation Californian. My mom's family came to build the missions. Anyway, I've been through a few droughts.

What I want to say is that I thought it was interesting—one of the things we've done down on the Central Coast, besides the Sustainable Winegrowing Alliance, has been participating down there. We're also the home of the Central Coast Vineyard Team. It was formed in the early '90s. I had the honor of being on the inaugural board. We put that thing together. It's been very successful. We now have a SIP certification on the bottled wine. There's some debate about whether that's a good idea or not, but I know in our little winery we do have a very loyal cadre of people that buy the wine, and they look for that symbol in the stores, and it means something to them. It means sustainability and practice, thus that with third-party certification, you've met standards for growing the wine, treating the labor, taking care of the wine, and so on all the way through. So I think that's been really big.

The other thing I want to point out, kind of building off Jerry's remarks about what we're going through with the water in Paso Robles—and we're trying to work our way through to see if we can find consensus to form a water district—is I think if we could find some of the magic of what these programs, the Sustainable Alliance—Lodi's done very well with their Lodi Rules—and a vineyard team, I think the one thing we've accomplished is we have built some esprit de corps and camaraderie in wanting to do what is the right thing. You can tell the enthusiasm of the folks talking here and the idea that you're really trying to sincerely accomplish self-improvement and leaving a little flexibility about how you're going to go about doing it.

I think that's something to consider with legislation, or anything you folks are working on, if you can allow a little bit of room for the individual local areas to sort of tweak it a little bit and come up with their own way to succeed. And I think one of the views of the Vineyard Team has been that you get people to do things

because they want to do it; they want to do it because it's economically sound, it's good for their business, it's good to take care of your farm, it's good to take care of your water. Like Jerry and I were talking about, I'm going to spend 50 percent of my time in this water district crusade, and there's some days you think, like, you're trying to herd cats—or one guy said, herd feral cats to get this thing done. It's very complicated, and you just want to change one little thing, and you get to come up to Sacramento again because you just need one little thing. But one little thing is not just one little thing when you come here. There's a lot of things going on, so one has to wind their way through it.

But the idea, when we get back there, is we want to see if we can—and I think we can do this—if we can get the agriculture to do the right thing, because it's smart to do it. We're now trying to get our rural residential folks to kind of see the light the same way; that instead of going to the meeting and beating the heck out of each other, we actually can find common ground and say, *Okay, how can we succeed together to keep all the wonderful things we got going on in Paso Robles?* You know, a great economy, a dynamic place. I mean, it has a lot of charm. I have no denigration of Paso Robles.

When I saw the movie *Nebraska*, which was a great movie, in a lot of ways when I moved to Paso Robles, it was on a decline; the grain business was coming to an end; it was a transition; it was set aside; and equipment dealerships were closing and so on. They did a marvelous rebirth with the winegrape industry and all the new folks that have come there and the restaurants and everything. That synergy we'd like to see go on, and I think if we could find a way to proactively do it together, boy, to me, it would be really gratifying to get it done that way and not have to do it through…you know, we hear it all the time, *Well, if we don't do anything, the state's going to come in and make us do something.* Well, that doesn't sound very enthusiastic to me. I'd rather do something because we could do it ourselves and do it the right way. If we could get some help from the state, I'm fine with that. But I don't want to wait around for anybody to make me do anything.

Anyway, I'm hopeful that being proactive and playing up on the success we've had with sustainability could also pay dividends in terms of planning how to

use water or use it differently or manage it and so on in the future. So hopefully, there's some good to be gotten out of some of the programs that have been successful up to now, and maybe we can use them as we go ahead.

So that's what I wanted to say.

ASSEMBLYMEMBER CHESBRO: Well, thank you very much for adding that additional input.

Is there anyone else who would like to address the committee? If not, I want to thank everyone for attending today's hearing, especially our presenters, who I think were wonderful.

As many of you know, this is my last term. I've truly enjoyed working with the wine industry, which I've always referred to as the "rock stars of business." I'll miss working with all of you. I will continue to consume your product, so the relationship will not end. And I wish all of you the best in the future.

Would any of the other committee members like to make a comment?

ASSEMBLYMEMBER EGGMAN: I would just like to say this is my first one I've attended, and it's fascinating. And I just want to thank Mr. Chesbro for his leadership and dedication to this all his years here. We will definitely miss you and your wealth of wisdom.

ASSEMBLYMEMBER CHESBRO: Well, thanks.

Any other comments?

ASSEMBLYMEMBER YAMADA: Well, I believe that all three of us here are completing our time in the Legislature, so we'll have other opportunities to celebrate the wine industry. I think there's an opportunity, I guess, after this hearing, that regrettably, because there's a social worker recognition that both Assemblymember Eggman and I will be attending, but who knows? Maybe we can, you know, we can slide over back and forth.

But I have had the privilege of representing a large wine region just for a brief period. It pales in comparison to the number of years that the dean of the Legislature here, Wes Chesbro, has served. I, too, want to thank him for all of his leadership in not only this area but in so many other areas leading to a better society, a better world; and I think that only the best is yet to come.

I want to thank all the presenters as well. I didn't mean to leave while the UC…somebody was just introducing themselves as being part of UC Davis, and I thought, oh no, I walked out right at the point that someone was testifying specifically from that great agricultural university. But I just want to thank you all, and I look forward to continuing to work on these issues in other fashions.

Thank you so much.

ASSEMBLYMEMBER CHESBRO: Senator Evans?

SENATOR EVANS: Yes, thank you. It's a bittersweet moment. I've had the pleasure of chairing the Wine Committee in both the Assembly and in the Senate for the last ten years and had annual hearings like this, many of them devoted to the issue of sustainable agriculture, and this is my last one.

It's been a real treat to be able to represent the winegrape growing regions of Northern California. Listening to the testimony today, as well as the other hearings that we've had in the past, it really brings home to me how much of a leadership role the winegrape growing and the wine producing regions of our state provide. Not just in California, not just in the United States, but really worldwide.

I have led a lot of Wine Committee tours to other winegrape growing regions in the world and had a lot of meetings with other leaders in other countries about sustainability and biodynamic farming and organic farming—what does this mean worldwide?—and I always come home to the conclusion that California really is a leader. And not just a leader on growing techniques or production techniques, but also in ecotourism and bringing people back to the land and what the land means to us in our daily lives, because most of us that are not farmers get disconnected from that and not understanding where our food comes from. It comes from Safeway, right? Well, no, it comes from the land. It's been a real opportunity for tourists to come to Napa or Sonoma, and now other grape growing regions, to find out that connection with the land.

And I'm really appreciative of all the work that the industry is doing, and I hope it continues, and I hope to be in a position to continue enjoying the product. But it's been a real privilege to be able to work with all of you folks and move this agenda forward. I will say it's been a real change from when I first chaired my first meeting on this issue ten years ago to hearing what you've all done today. It's

been a tremendous amount of work, and it's been a real privilege to be part of that. So thank you.

And thank you for this hearing, for everybody that was involved, including the staff for arranging this, and the Wine Institute. It was a great hearing.

Thank you.

ASSEMBLYMEMBER CHESBRO: Hear, hear!

So, if there's no other comments, I want to remind everyone that following this hearing there's a reception in Room 317, which, if you don't know your way around this confusing building, it's on the third floor of the old building. You ride the elevators off the side of the rotunda on the Assembly side up to the third floor. I will feature wines made using sustainable practices, so we'll look forward to having a chance to continue the conversation.

See you there.

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