



A Tradition of Stewardship
A Commitment to Service

Planning, Building, and Environmental Services

A TALE OF TWO COUNTIES: YOLO AND NAPA

August 14, 2015





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“WINE!

**Because these problems aren't
going to forget THEMSELVES!**

- Tanya Masse





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THE DILEMMA OF CLIMATE ACTION PLANNING IN RURAL AREAS

Compliance with AB 32 is primarily designed to address problems in sprawling urban areas. Increase construction standards, expand renewable energy, promote density along major transit corridors. Post-WWII development patterns in many California cities left behind a large GHG footprint that allow clear growth-based solutions.

But what if your jurisdiction didn't participate in the typical growth boom that has characterized much of California over the last 70 years? What if your county doesn't project new future construction, or have major transit corridors, and wants to continue to protect open space and farming?



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THE DILEMMA OF CLIMATE ACTION PLANNING IN RURAL AREAS

CARB estimates that agriculture contributed 8% of GHG emissions in California in 2013. That's larger than the residential sector, and almost as large as imported energy.

But 66% of agriculture's contribution relates to confined animal facilities, such as dairies and feedlots.

The GHG emissions of the 13 million acres of cropland were about equal to the total output of utility owned in-state electricity generation.

What if your jurisdiction's agricultural sector didn't focus on livestock, instead emphasizing row crops, vineyards, and orchards? How do you comply with AB 32?



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YOLO COUNTY

**“Wine is a gateway drug to environmentalism” –
Katherine Cole**

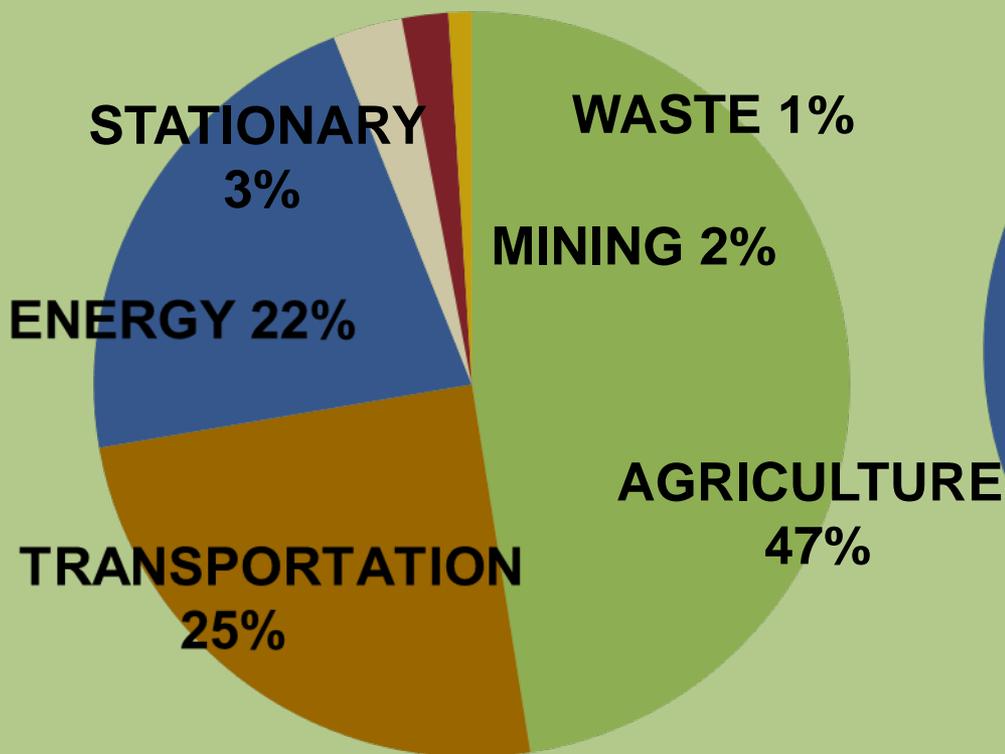




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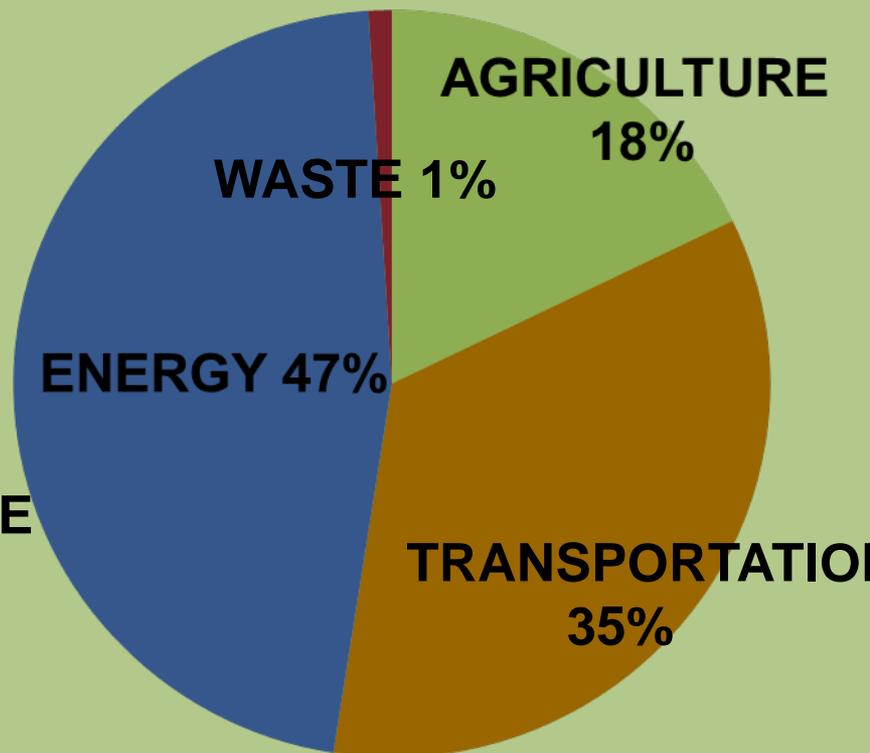
FUTURE GHG EMISSIONS WILL COME FROM A NEW CITY

1990 GHG EMISSIONS



613,651 MTCO₂e

2050 GHG EMISSIONS



1,607,698 MTCO₂e



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CONSTRAINTS TO REDUCING GHG EMISSIONS IN YOLO

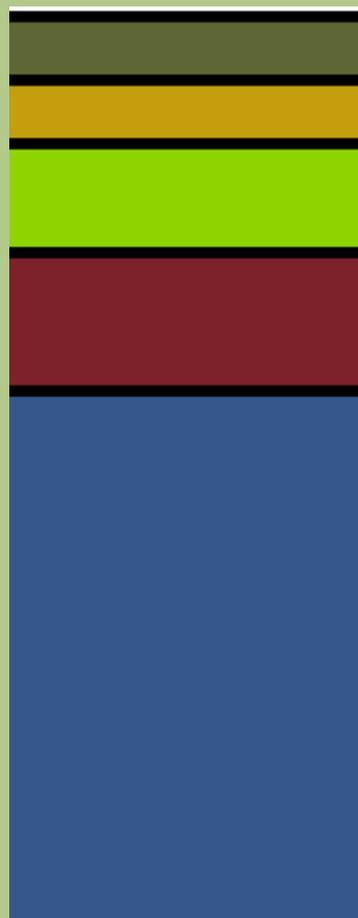
- Each acre of agriculture converted to urban development results in an increase in GHG emissions of 10,000%. But methodology only allows for smart growth, not smart conservation.
- No established methodology for calculating GHG emissions from various crop types or for wetland development. Also no methodology for organic crops.
- The Yolo County General Plan assumed development of a new city, to reduce pressure on floodplains, prime farmland, sensitive habitat, and high hazard wildfire zones.



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MEETING GHG REDUCTION GOALS WILL COME FROM ENERGY REDUCTION

993,537 MTCO₂e – 2020 Projections



29,603 MTCO₂e – Agricultural Practices

42,018 MTCO₂e – VMT Reduction

121,212 MTCO₂e – State Measures

180,425 MTCO₂e – Energy Reduction

613,651 MTCO₂e – 2020 GHG Goal



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ENGAGING THE AGRICULTURAL COMMUNITY



I inherited that calm from my father, who was a farmer. You sow, you wait for good or bad weather, you harvest, but working is something you always need to do.

Miguel Indurain

Farms and ranches contend with much more than quarterly reports and profit margins - the weather can wreak havoc on their quality of life and economic viability. - Ruben Hinojosa



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ENGAGING THE AGRICULTURAL COMMUNITY

- Treat farmers as scientists. They have extensive knowledge of soil, water, climate, biology, etc.
- Understand their economic needs. They don't get a regular paycheck. Although land rich, they may be cash poor. Their income is dependent on frost, flood, and foreign commodity prices.
- Go out to them. Most farmers are proud of their land and love to show it off.
- Be honest and straightforward. They deal with salespeople, farm labor, government, and crop brokers all the time. They barter and deal constantly. Don't think you can fast talk your way through.



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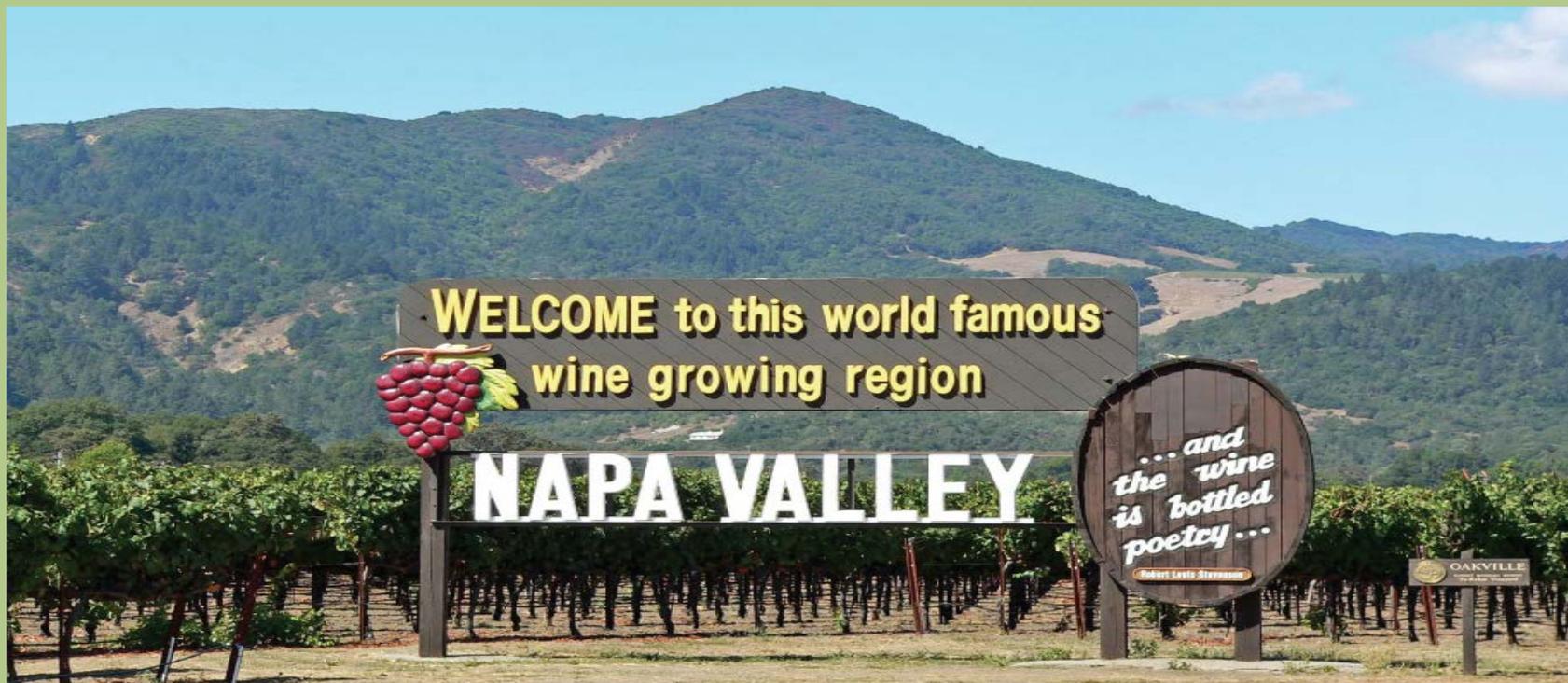
ENGAGING THE AGRICULTURAL COMMUNITY

- Slow down. Farmers measure time in generations, not minutes. Pull up a chair, take your time, and let them ask questions.
- It's okay to treat things lightly. Farmers have a sense of humor, sometimes dry, sometimes aggressive. Loosen up and show them that you're a human being too.
- If offered, accept their hospitality. Don't be rude. Sit in the dusty old office, have a glass of tea or beer, and thank your host.
- Think local. Farmers are less concerned with the Ross Ice Shelf and more concerned with their water well, their growing season, their fuel costs.



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NAPA COUNTY



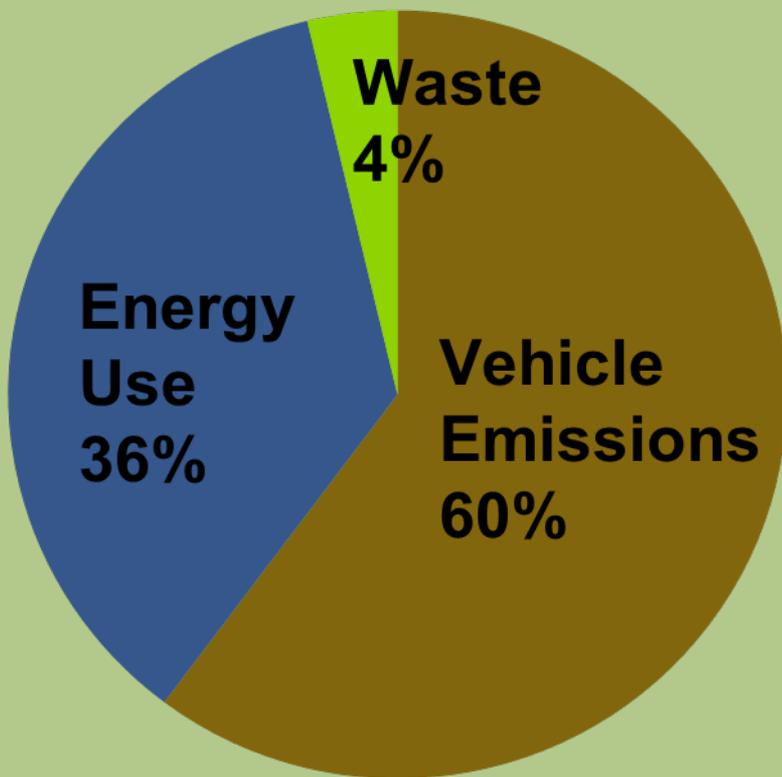
“When you uncork a bottle of mature fine wine, what you are drinking is the product of a particular culture and tradition, a particular soil, a particular climate, the weather in that year...” - Neel Burton



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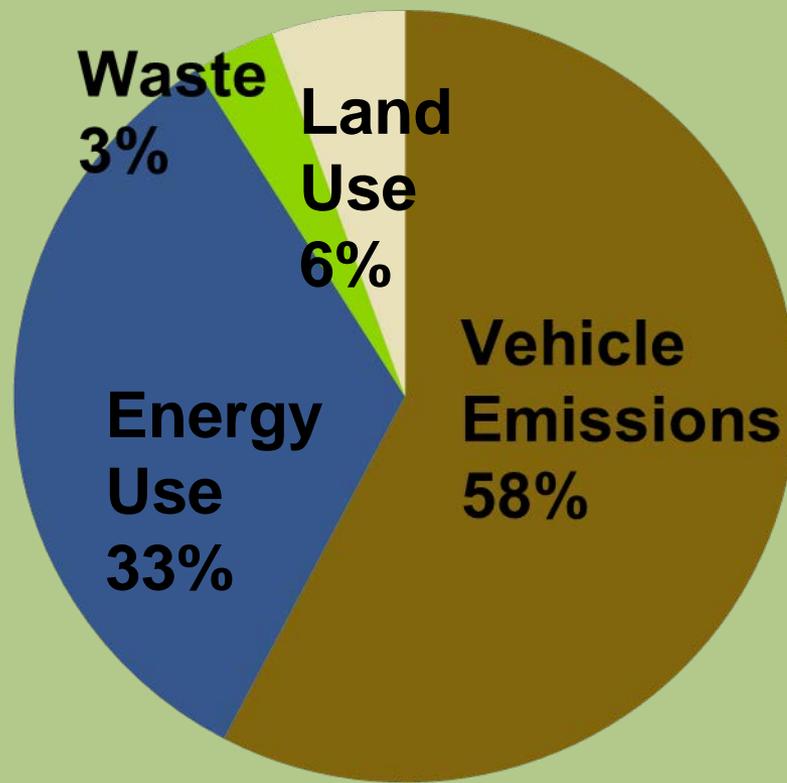
FUTURE GHG EMISSIONS WILL COME FROM LIMITED DEVELOPMENT

NAPA COUNTY 2005 BASELINE EMISSIONS



398,122 MTCO₂e

NAPA COUNTY 2020 ESTIMATED EMISSIONS



499,832 MTCO₂e



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CONSTRAINTS TO REDUCING GHG EMISSIONS IN NAPA

- Energy savings in new construction will be minimal. Growth in population, jobs, and housing will average less than 1% per year.
- Unincorporated Napa does not rely on imported water, so energy savings of conservation are not as great.
- The dispersed nature of rural development does not facilitate trip reduction through mass transit.
- Napa already diverts 71% of its waste stream, so additional savings are unlikely.



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NAPA CAN'T SEQUESTER ITS WAY TO COMPLIANCE

VEGETATION	AREA (ACRES)	SEQUESTRATION RATE (MTC/ACRE/YEAR)	ANNUAL SEQUESTRATION (MTCO ₂ e)
Oak Woodland	161,976 (36.9%)	0.425	68,828 (64.4%)
Chaparral	107,583 (24.5%)	0.004	430 (0.4%)
Grassland	53,706 (12.2%)	0.004	215 (0.2%)
Conifer Forest	42,984 (9.8%)	0.666	28,615 (26.8%)
Vineyards	40,439 (9.2%)	0.097	3,928 (3.7%)
Cropland	23,984 (5.5%)	0.057	1,372 (1.3%)
Riparian	8,060 (1.8%)	0.425	3,425 (3.2%)
TOTAL	438,732 (100.0%)		106,813 (100.0%)

Converting all chaparral and grasslands to oak woodland would increase sequestration by 71,903 MTCO₂e; to conifer forests by 106,773 MTCO₂e.



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MEETING GHG REDUCTION GOALS WILL PRIMARILY COME FROM STATE ACTIONS

499,832 MTCO₂e – 2020 Projections



20,508 MTCO₂e – Other

44,711 MTCO₂e – Project Measures

96,262 MTCO₂e – State Measures

338,440 MTCO₂e – 2020 GHG Goal



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DIRE FORECASTS

National Academy of Sciences forecasts temperature increases triggering the loss of two-thirds or more of the Napa Valley's current grape output by 2050

Scientists at Stanford, Purdue, and Utah State University estimate that by 2040 global warming is likely to cut in half the area in Napa and Sonoma valleys where temperatures are suitable to grow top-quality wine grapes.

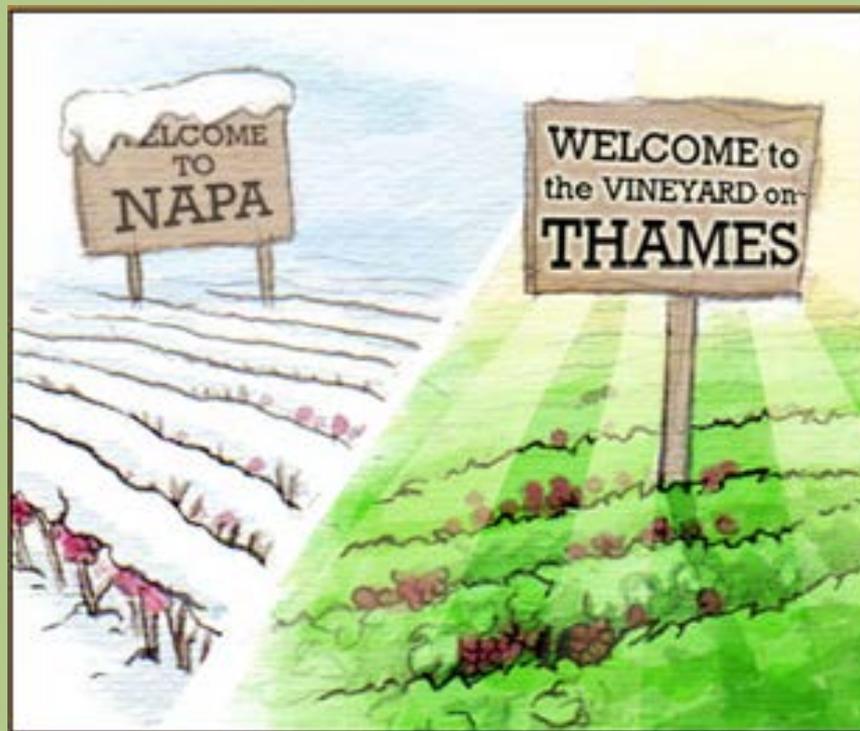
According to the government's Global Change Research Program, temperatures in the Napa Valley area over the next 40 years will rise about 4 degrees, which means that the amount of land in Napa County suitable for growing grapes could be cut in half.



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DIRE PREDICTIONS

**"I learned how to make wine in hot weather. With global warming underway, that is an important lesson."
- Pierre Seillan, on what he learned in California**





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NAPA VALLEY CLIMATE STUDY

In 2011, the Napa Valley Vintners engaged the Scripps Institute at UCSD to conduct a study using 12,000 data points and going back 70 years, which found:

- Napa has experienced 1 to 2 degrees warming, much less than inferred from weather station data.
- Warming generally occurs between January and August, and during nighttime.
- There is little evidence that the growing cycle of the grapevines has changed substantially.

UCSD is working on Phase 2 of the study. A draft report should be completed by the end of this year.



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THANK YOU

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