



A Tradition of Stewardship
A Commitment to Service

Department of Conservation, Development & Planning

Planning for GHG Emission Reductions in Unincorporated Napa County

October 2010 Status Report

Briefing Schedule

- Sustainable Napa County, October 5 & October 20
- Sierra Club & Ag Commissioner, October 13
- BAAQMD Staff, October 14
- Vintners, Farm Bureau, Grape Growers, October 21
- Napa County Planning Commission, November 3
- Board of Supervisors, TBD
- Others?

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AB 32: Global Warming Solutions Act of 2006

- ❑ AB 32 Set GHG emissions limit for 2020 at 1990 levels and:
 - Assigned implementation responsibility to the California Air Resources Board (CARB); and
 - Required that the Governor's Office of Planning and Research (OPR) develop amendments to the State CEQA Guidelines.
- ❑ CARB subsequently adopted a Scoping Plan to achieve AB 32's GHG reduction target, and defined that target as 15% below 2005 levels.
- ❑ The State legislature subsequently adopted SB 375 to address GHG emissions from cars & light trucks through development of "sustainable community strategies."
- ❑ OPR has developed (and the Natural Resources Agency has adopted) amendments to the CEQA Guidelines addressing GHG

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Napa County General Plan (2008 Update)

- ❑ Action Item Con CPSP-1 in the General Plan commits the County to develop a County-wide GHG emissions inventory and seek reductions consistent with AB 32.
- ❑ General Plan Policy CON-65 supports efforts to reduce and offset GHG emissions through a variety of means and states that the County shall “strive to maintain and enhance the County’s current level of carbon sequestration functions.”
- ❑ The General Plan EIR concluded that GHG emissions in the year 2030 will remain significant and unavoidable despite commitments contained within the plan. (A conclusion that is consistent with our understanding of climate change as a global problem.)
- ❑ Napa County’s local procedures for implementing CEQA have been updated to reflect changes to the State CEQA Guidelines addressing GHG

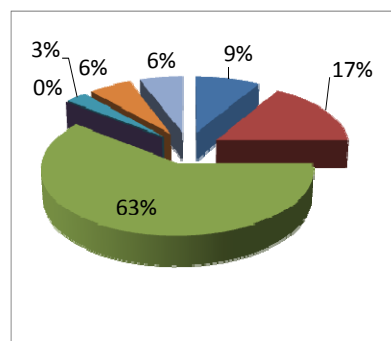
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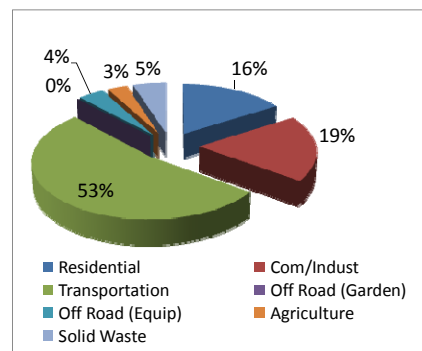


Initial Inventory of GHG Emissions (NCTPA, 2009)

Unincorp County 2005
550,986 MT CO₂e



County as a Whole 2005
1,122,454 MT CO₂e



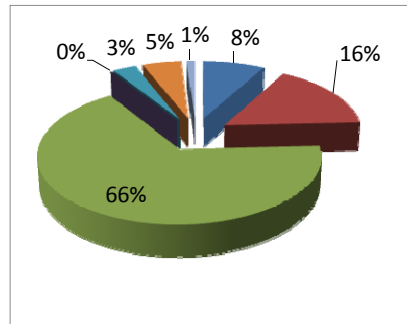
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Initial Forecast of GHG Emissions (NCTPA, 2009)

Unincorp County 2020 BAU Original Forecast 666,600 MT CO₂e



Residential	8%
Com/Indust	16%
Transportation	66%
Off Road (Garden)	0%
Off Road (Equip)	3%
Agriculture	5%
Solid Waste	1%
County Ops	1%
Land Conversion	N/A
Loss of Sequestration	N/A

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NCTPA Emission Reduction "Framework" (2009)

- ❑ 53 actions within six categories:
 - Expand transportation & mobility options
 - Improve building & energy efficiencies
 - Reduce consumption & solid waste
 - Conserve agriculture, natural resources & urban forests
 - Increase community engagement
 - Improve local government operations
- ❑ Jointly developed by staff of all 6 county jurisdictions as a basis for future planning; emphasis on cooperation and collaboration
- ❑ "Aspirational" and non-binding plan; not reviewed pursuant to CEQA.

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Napa County: 2010 Activities

- ☐ Adopted an emission reduction plan for County operations
- ☐ Refining the GHG inventory for Unincorporated Napa County
- ☐ Preparing a "Qualified" Climate Action Plan for emission reductions in Unincorporated Napa County
- ☐ Using new BAAQMD thresholds in CEQA review of winery & com/industrial projects
- ☐ Conducting project-by-project review of vineyard proposals (there are no adopted CEQA thresholds)
- ☐ Requesting voluntary emission reduction measures & "best practices" from all project applicants

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Refining the Emission Inventory/Forecast for 2005 & 2020 "Business as Usual"

- ☐ VMT attributed based on origins & destinations
- ☐ Considered vehicle speeds in addition to VMT
- ☐ Considered emissions other than CO



Trip Type and Percent of Total	2003	2030
Trips starting and ending in the unincorporated area of the county	7%	7%
Trips starting and ending in cities and town in Napa County	43%	31%
Trips between the unincorporated area and cities and town in Napa County	15%	14%
Trips between Napa County and other counties	20%	24%
Trips starting and ending outside Napa County (that is, passing through the county)	14%	24%

Source: Napa County General Plan, 2008

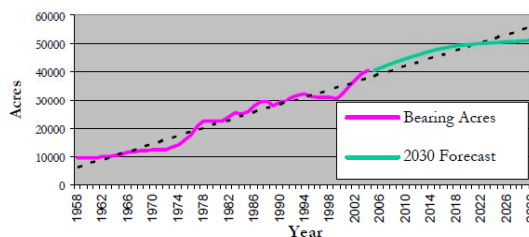
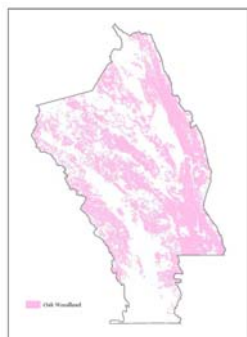
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Refining the Emission Inventory/Forecast for 2005 and 2020 "Business as Usual"

- ☐ Quantify annual carbon sequestration by vegetation (as context)
- ☐ Forecast land cover changes as a result of rural and urban development and new vineyards (multiple scenarios)



Source: Napa County Conservation, Development and Planning Department, 2007.

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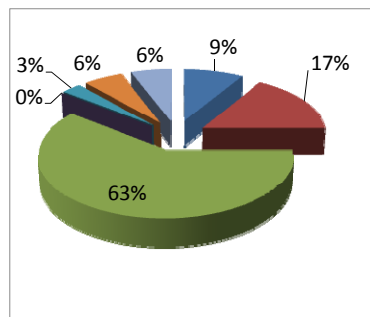
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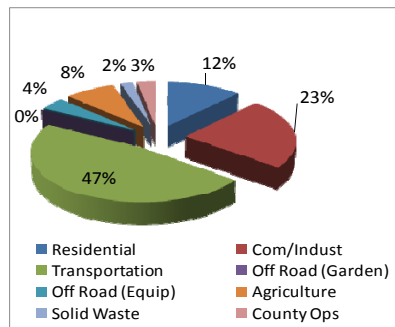
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Revised Inventory of GHG Emissions (ICF, 2010)

**Unincorp County 2005
Original Inventory
550,986 MT CO₂e**



**Unincorp County 2005
Revised Inventory
406,060 MT CO₂e**



(Annual Uptake by Natural Processes = 391,650 MT CO₂e)

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Refining the Emission Inventory/Forecast for 2005 and 2020 "Business as Usual"

Preliminary DRAFT Data -- Subject to Change	2005		2020	
	PREVIOUS INVENTORY	UPDATED INVENTORY	PREVIOUS INVENTORY	UPDATED INVENTORY
	(metric tons CO ₂ e)	(metric tons CO ₂ e)	(metric tons CO ₂ e)	(metric tons CO ₂ e)
Naturally Occurring Sinks				
Annual Uptake by Natural Processes ¹	N/A	391,650	N/A	382,850 to 390,670
Anthropogenic Sources ²				
Residential Building Energy Use	48,220	48,220	51,230	55,940
Commercial/Industrial Building Energy Use	95,320	95,320	107,600	111,060
Waste	9,240	9,240	9,790	10,630
On-Road Vehicles ³	349,760	191,270	437,840	230,100
Off-Road Vehicles (Lawn and Garden)	750	750	800	870
Off-Road Vehicles (Commercial/Industrial)	15,870	15,870	17,920	18,830
Agricultural Vehicles ⁴	31,820	31,820	31,820	38,390
Municipal Operations ⁵	9,600	13,570	9,600	15,610
Land Conversion (Vineyard Expansion Scenarios 1-3) ^{6,7}	N/A	N/A	N/A	41,280 to 91,660
Land Conversion (Alternatives A) ⁸	N/A	N/A	N/A	7220
Loss in Annual Sequestration Capacity ⁹	N/A	N/A	N/A	980 to 8,800
TOTAL EMISSIONS ^{9,10}	560,580	406,060	666,600	530,910 to 589,110

AB 32 Target = 15% below 2005
(345,151 metric tons CO₂e)



Source: ICF 2010

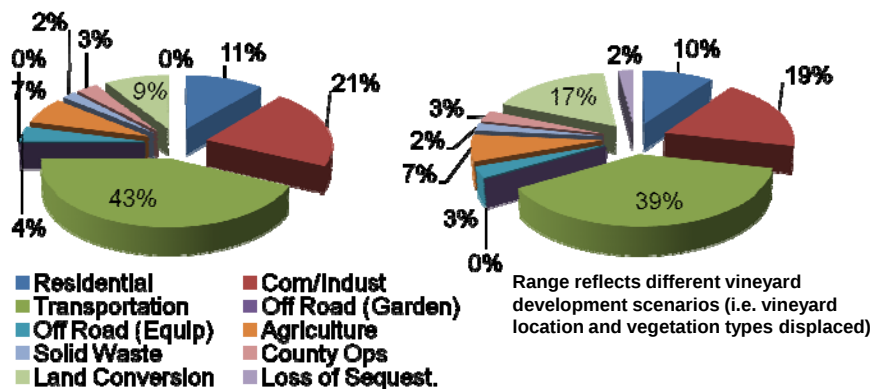
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DRAFT Revised Forecast of GHG Emissions (ICF, 2010)

Unincorporated Napa County 2020 "Business as Usual" 530,910 – 589,110 MT CO₂e



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Planning for GHG Emission Reductions in Unincorporated Napa County

- ☐ Next Step: Emission Reduction Plan in preparation
 - Will build on NCTPA's "Framework" & voluntary measures already being implemented
 - Will also include State requirements (e.g. new building code; fuel efficiency)
 - Will have to include strategies to address GHG from residences, businesses, transportation, and land conversion
- ☐ Draft Plan will be circulated for public comments
- ☐ CEQA review is required prior to adoption

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Issue in Focus: GHG & Vineyards

- ☐ One time construction impacts (equipment emissions, removal of vegetation, soil prep)
- ☐ Ongoing loss of sequestration (if annual sequestration by the vineyard will be less than existing vegetation over time)
- ☐ Other operational (ongoing) emissions



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Issue in Focus: GHG & Vineyards

Ongoing Loss of Sequestration (expressed as annual CO₂e emissions) -- Calculations from 3 Recent Projects

	Vineyard Size	Time Period Analyzed	"No Project" Sequestration	Vineyard Sequestration	Annual Change in Sequestration
Project 1	161 acres	100 years	33,603 MT	2,738 MT	308 MT/year
Project 2	459 acres	100 years	26,819 MT	0 MT	270 MT/year
Project 3	28.9 acres	25 years	1,101 MT	550-880 MT	22 MT/year

- ☐ The sites all contain a mix of oak woodlands and grassland, but differ greatly.
- ☐ Three different consultants prepared studies based on conservative assumptions.
- ☐ The science is definitely evolving.

Bottom line:

annual emissions associated w/changes in sequestration are difficult to quantify and relatively modest.

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Issue in Focus: GHG & Vineyards

One Time GHG Emissions (CO₂e) from Vineyard Development -- Calculations from 3 Recent Projects

	Vineyard Size	Carbon Stock in Vegetation	Carbon in Soil	Carbon Lost with Site Clearing
Project 1	161 acres	184 MT/Ac	41 MT/Ac	32,432 MT
Project 2	459 acres	145 MT/Ac	41 MT/Ac	78,000 MT
Project 3	28.9 acres	118 MT/Ac	25 MT/Ac	2,026 MT

- ☐ All studies used COLE data for vegetation types & other published sources
- ☐ Project 2 emissions include construction equipment
- ☐ Project 3 assumed a lesser percentage of soil carbon is lost.

Bottom line:

One time emissions associated w/land conversion can be substantial.

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Determining CEQA Significance

Outstanding Questions

- ☐ Should all land conversions be treated equal, whether they're for shopping malls or for agriculture?
- ☐ When are GHG emissions associated with land conversions significant? When are they less than significant?
- ☐ How should our local Climate Action Plan address these questions and effectively reduce projected emissions?
- ☐ How should our local Climate Action Plan address "pipeline" projects that are in process?



Merenlender, 1999

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Emission Reduction Strategies

Best Practices for Operational Vineyards

Till/no till -- Cover crops -- Water conservation -- Use of alternative fuels -- Mulching rather than burning -- IPM/minimize fertilizer use -- Other?

Best Practices for Vineyard Development

Row orientation -- Vine density -- Chipping & mulching -- burying woody debris -- Use of alternative fuels -- reuse of wood/biofuel generation -- Other?

Possible Mitigation Measures (to address significant impacts associated w/cumulative GHG from vineyard development projects)

Habitat replacement & restoration -- Avoided deforestation -- Fire suppression activities -- Phase development -- Steer development towards some land covers over others -- Offsets -- Other?

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Next Steps

- ☐ Industry & other stakeholder input on emission reduction strategies & other outstanding questions
- ☐ Work with BAAQMD on a CEQA threshold for land conversions generally
- ☐ Present refined inventory to Planning Commission & get their direction on emission reduction strategies
- ☐ Address comments & determine if AB 32 target can be met
- ☐ Circulate Draft Climate Action Plan & CEQA Document
- ☐ Finalize & adopt Climate Action Plan

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Discussion



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