

**Land Use and Urban Form:
Opportunities for
Greenhouse Gas
Emission Reduction in
Sonoma County**

Community Climate Action Plan

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Land Use and Urban Form

THE LINKAGE OF LAND USE PATTERNS AND GHG EMISSIONS

Land use patterns, especially the distribution and density of urban and rural development, and propensity for people to live and work in different communities, affect the production of greenhouse gases primarily through the transportation system – the dependence upon single-occupancy vehicles as the primary transportation mode. Sonoma County largely developed its current land use pattern during the post-World War II period, a time during which fossil fuel energy was inexpensive and large investments were being made in highway infrastructure. This has allowed/ promoted a decentralized, auto-dependent lifestyle with residents commuting longer and longer distances to work and, increasingly, making multiple vehicle trips for other purposes including school, shopping, and recreation. The key impact of land use and urban form relates to vehicle miles traveled (VMT). Reducing vehicle miles traveled becomes a cornerstone of policy for reducing GHG emissions. It is also the case that larger, dispersed rural residences use more energy for heating, lighting, and utilities (e.g., domestic water wells) etc. A more compact urban form offers opportunities for more efficient utility systems and related reductions in per unit energy consumption.

HISTORICAL PERSPECTIVE

Throughout the early part of the 20th Century, Sonoma County development was related to its ample natural resources – farm and grazing lands, timber resources, and fisheries. The proximity to Bay Area markets created many opportunities for small-scale agriculture providing fresh fruit, forage, and vegetables to the nearby urban markets. Tourism also developed as the railroads, originally built to move lumber and agricultural products, provided access to resort centers located along the Russian River and in the Sonoma Valley. Small cities emerged based on these industries, with Santa Rosa and Petaluma as the largest, but a considerable population dispersed in rural areas and small villages and towns. In the post-war economic expansion of the 1950's and 60's, Sonoma County, reflecting a national pattern, experienced a period of rapid suburban growth coinciding with growth in the Bay Area as a whole and increased access to labor markets along Highway 101, as well as local economic development.

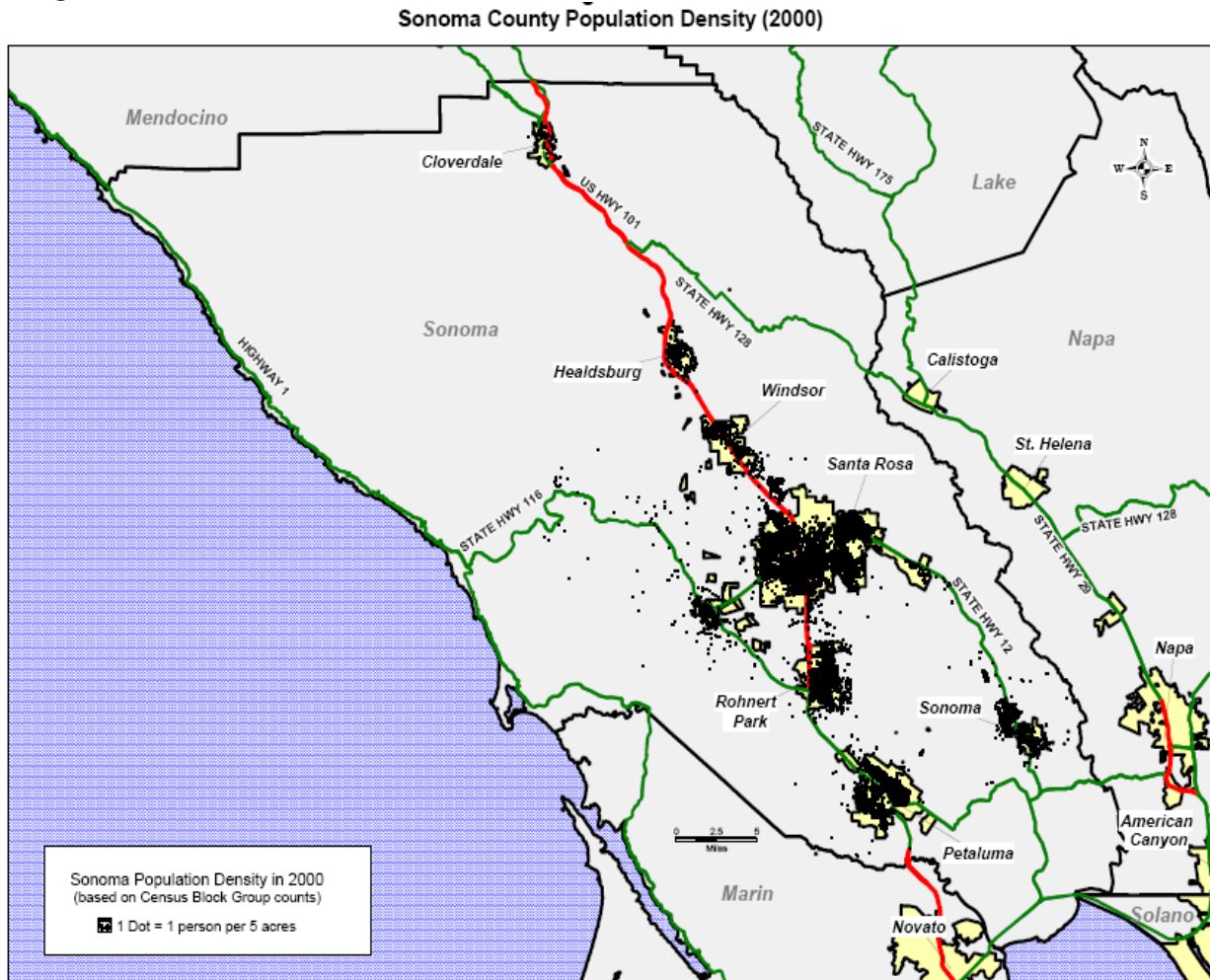
In addition to job opportunities created by the growing economy, growth was also fueled by people relocating to Sonoma County for quality of life amenities and the ample opportunities for a rural or quasi-rural lifestyle proximate to a vital San Francisco metropolitan region. These market forces led to a dispersed population pattern. In 1970 approximately 51 percent of the County's population of 205,000 lived in unincorporated areas.¹ By the year 2000 the County population had grown to 458,600, and while the bulk of the new population was located in the cities, the unincorporated population continued to grow as well.² At the present time, about 32 percent of the County's

¹ Greenbelt Alliance and Sonoma County Farmers Bureau "Preventing Sprawl" publication.

² California Department of Finance.

population, approximately 154,000 persons, reside in unincorporated areas.³ **Figure 1** illustrates the current population distribution in Sonoma County.

Figure 1



CURRENT POLICY FRAMEWORK IN SONOMA COUNTY

Since the late 1960's, Sonoma County and the cities in the County have been at the forefront of local land use policy in the United States. The landmark Petaluma growth management program and subsequent legal decision in the early 1970's established the validity of local governments regulating growth. Subsequently, the County adopted a progressive County General Plan that was based upon "city-centered" growth, urban separation, and preservation of agricultural and other significant open space resources. In the years that followed, the cities adopted and improved their general plans, largely consistent with the vision established in the County General Plan.

³ ABAG Projections 2007.

During the 1980's and 1990's growth management systems were adopted by most of the other cities in the County, building upon the methods included in Petaluma's original program: urban limit lines and annual growth caps. In 1990, voters in the County created the Sonoma County Agriculture and Open Space District, funded with a ¼ cent sales tax, to purchase land or easements, consistent with the County's General Plan vision. Most recently, again reflecting national trends and local market opportunities, the cities have begun focusing upon revitalizing their downtown areas, pursuing higher density, mixed-use urban infill development, and transit-oriented development.

The County has recently prepared an update of its General Plan. The new General Plan does not include any significant alteration or expansion of land use designations from the previous General Plan. Unincorporated areas are divided into resource production areas (agriculture, timber), rural residential areas, and urban service areas corresponding to the historical villages and towns (e.g., Graton). Growth projections indicate relatively modest future growth in unincorporated areas; this growth is constrained by limited urban service capacity in the urban service areas and the relatively high cost of constructing a residence in rural areas (requiring onsite water and sewer treatment, etc.). Hence, over the next 25 years, approximately 20 percent of overall County growth is expected in unincorporated areas, with the balance being located in the County's cities.⁴ By 2015, land use policy put in place today will have affected about 8 percent of the total, future population – about 43,500 people of the total projected 521,000.⁵

Most of the County's nine cities have also been involved in General Plan updates recently. These General Plans have all focused upon territory included in their established urban limit lines. No substantial urban expansion has been reflected in any of the city planning efforts. At the same time, the planning efforts have focused upon intensification (higher densities) for remaining vacant lands and also infill and redevelopment in existing urban areas.

These trends in land use policy and development patterns in Sonoma County, insofar as urban densities increase and a mix of uses is promoted, create opportunities for a more efficient transportation system (reduced dependence on single occupancy vehicles and increasing diversion of trips to other modes (transit, walking, bicycles). On the other hand, the historical decentralized pattern of land uses, including a large unincorporated population, will be difficult to change in terms of this population's place of residence and related dependence upon single-occupancy vehicles.

POLICY INITIATIVES

Despite the successful planning that has occurred in Sonoma County, continued growth pressure, the historical land use patterns, market preferences for a rural lifestyle, and

⁴ Ibid.

⁵ Ibid.

propensity of workers to commute long distances to job sites have all contributed to substantially increased vehicle miles traveled in the County. Between 1990 and 2000, total vehicles miles traveled in the County increased by more than 40 percent while population has increased by only 18 percent.⁶ This additional travel has resulted in a substantial increase in greenhouse gas emissions, impacts on air quality, and continued major investments in highway infrastructure.

Going forward, it will be important to assure that the range of existing city and County land use policies and initiatives continue to emphasize compact urban form, transit-oriented development and infill and intensification of existing urban areas. It will also be important to stabilize or, where possible, reduce rural development densities in agricultural, timber resources, and wild land areas.

COMMUNITY CLIMATE ACTION PLAN POLICIES

The CCAP policies related to land use are directed at the County and the nine cities that maintain regulatory authority over land use within each of their jurisdictions.

City Land Use and Growth Policy

1. Continued emphasis upon urban revitalization, infill development, mixed-use development, and transit-oriented development along major transportation and transit corridors.
2. Maintain existing urban limit lines. Most of the urban limit lines have “sunset dates” and/or can be revised by ballot initiative. It will be important to maintain a constituency for “holding the line” on growth while allowing for rational and prudent expansion of urban areas.

County Land Use Policy

3. Maintain the pattern of land use designations reflected in the General Plan that direct growth primarily to the Cities and urban service areas.
4. Strengthen land use policies that restrict urban or rural residential encroachment in these resource production areas. Policies that “exchange” potential development in rural areas for development in cities or urban service areas (e.g., TDR) should be considered.
5. Encourage economic development and a mix of uses in unincorporated urban service areas that minimize the need for nearby residents to travel greater distances to access goods and services.

⁶ Sonoma County’s Emissions Inventory, January 2005.

6. Strengthen local resource-based industries including agriculture and timber resources. Local agriculture and timber production are both highly competitive industries that need both public and private support if they are to be sustained in Sonoma County. Strong resource-based industries reduce incentives to convert rural areas to large lot residential uses.

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7. Prepare technical review of each City and the County's General Plan policies that evaluates the extent to which existing policies promote or allow carbon-reducing behaviors and to suggest areas where significant improvements are possible. A "handbook" documenting resources and references for specific policy improvements should be included.
8. Support the ability of Sonoma County Agricultural Preservation and Open Space District role in preserving open space throughout the County. The funding for the District will need to be re-authorized in 2010. It is important to support re-authorization so the District can continue its efforts to secure agricultural and open space lands, reducing potential for dispersed rural residential uses.