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Planning, Building & Environmental Services

1195 Third Street, Suite 210  
Napa, CA 94559  
www.countyofnapa.org

**Hillary Gitelman**  
Director

## MEMORANDUM

To:	Climate Action Plan -- Interested Parties	From:	Hillary Gitelman & Kirsty Shelton
Date:	October 9, 2012	Re:	Draft Climate Action Plan: Proposed Voluntary In Lieu Fee

Adoption of a final Climate Action Plan (CAP) for unincorporated Napa County has been pending before the Board of Supervisors since early 2012. Once adopted, the CAP would require developers to reduce the green house gas (GHG) emissions associated with proposed developments by 38% below “business as usual.”

During the time that the CAP has been pending, staff committed to the Planning Commission and the Board of Supervisors that it would (1) develop a tool so that applicants can easily provide required information and project GHG emissions and reductions can be calculated fairly and consistently; and (2) develop a carbon “bank” or other process that would allow developers to comply with the Climate Action Plan by paying a fee where that was appropriate as an alternative to on-site emission reductions.

Kirsty Shelton is available to describe the forms and process we’ve developed for calculating “business as usual” project emissions and reductions. This involves use of a comprehensive spreadsheet and Kirsty can work one-on-one with project applicants and other interested parties who wish to “test” the tool and better understand the calculations. Kirsty has also completed calculations for projects reviewed by the Planning Commission since early 2012 in order to inform the Commission’s deliberations. The remainder of this memo focuses on the second item listed above: development of a fee program that will allow applicants to pay for emission reductions elsewhere when they find it too challenging to reduce emissions on site.

### Voluntary Fee Mitigation Program: Why Buy Local?

The Planning Commission, Board of Supervisors, and many of the stakeholders who participated in development of the CAP have largely agreed that any carbon “bank” or fee mitigation program that’s developed should focus on reducing GHG emissions locally, rather than in some far away place like the Amazon rainforest or the Pacific Northwest. This preference is based on the understanding that local carbon “credits” are more easily monitored and therefore more believable than other credits, and that Napa County residents should enjoy the co-benefits (e.g. reduced traffic, energy conservation, habitat restoration) that accrue as a result. Also, there are policies in the County’s General Plan that tend to support this local approach (Policy CON-65 “*strive to maintain current level of sequestration...*”).

To establish a local non-profit “carbon reserve” program, staff initially sought grant funding in collaboration with the City of Napa and Sustainable Napa County. When the grant application was denied, staff had to identify a simpler approach and elected to pursue a fee mitigation program similar to the transportation fee mitigation program in place in the Airport Industrial Area. The one difference would be that developers could avoid paying the fee by implementing on-site emission reductions. This is similar to the approach being developed in Sonoma County, and could ultimately transition to a more sophisticated “carbon reserve” managed by a non-profit organization if one is established here in Napa County.

### Voluntary Fee Mitigation Program: Development Methodology

To establish a mitigation fee, it was first necessary to answer the question: “*What does it cost to reduce GHG emissions by one metric ton in Napa County?*”<sup>1</sup> This is a complicated question because there are so many ways to reduce emissions, and each has different costs associated with it. Some emission reduction strategies are relatively inexpensive (for example, energy conservation measures like adding insulation) and some are quite costly (for example, implementing transit or shuttle service). Also, some emission reduction strategies come with rebates or other funding opportunities, some pay for themselves over time via reduced energy costs, and all of them have different useful life spans.

To get a handle on these complications, staff is analyzing a wide variety of project types from diverse sectors including energy efficiency, alternative energy generation, land conservation, habitat restoration, and alternative transportation. Data sources include but are not limited to the following:

- Napa County building permits;
- City and County funded projects completed, including solar energy projects, and a large habitat restoration project;
- Projects completed by Healthy Buildings USA, a local General Contractor, and by Sustainable Napa County, a local non-profit;
- Bay Area Air Quality Management District’s (BAAQMD) standards, and
- California Air Pollution Control Officers Association (CAPCOA) guidelines.

A summary of findings to date is provided below.

Alternative Transportation - The City of Napa analyzed the cost of installing a half mile bike lane that would connect an existing commute bike lane (California Blv. connection). The project is proposed to cost (without grant funding) a total of \$450,000. Based on BAAQMD emission factors and assumptions it will reduce 56,680 annual vehicle miles traveled and has a 15 year lifespan, which is estimated to offset a total of 409.8 MTCO<sub>2</sub>e over its lifetime, costing approximately **\$109.80/MTCO<sub>2</sub>e**.

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<sup>1</sup> GHG emissions are measured in metric tons of CO<sub>2</sub> equivalents (a metric ton equals 2,204.62 lbs.), expressed as “CO<sub>2</sub>e.”

Energy Conservation - Three commercial replacement lighting projects executed by a local non-profit were analyzed. The average cost was \$14,247 for an average savings of 49,913 kilowatt hours per year, which translates to 11.77 MTCO<sub>2e</sub> per year.<sup>2</sup> Based on industry standards, the improvements have a 10 year lifespan yielding an average cost of **\$121.04/MTCO<sub>2e</sub>** (less if rebates are factored in).

Alternative Energy - Two separate 2012 building permits for solar energy projects at commercial facilities were analyzed. The average cost was \$1,300,000 for a 400 kilowatt system<sup>3</sup>. This would generate about 640,000 Kilowatt hours per year, which translates to about 151 MTCO<sub>2e</sub> per year. With a 25-year lifespan this would offset a total of 3,774 MTCO<sub>2e</sub>, costing about **\$344.46/MTCO<sub>2e</sub>** (less if rebates are factored in).

Staff also looked at 89 residential building permits for solar energy projects submitted to Napa County in 2011. The average system was 8.5 kilowatts and cost about \$45,000. An 8.5 kilowatt system generates about 13,600 kilowatt hours per year, which translates to 3.2 MTCO<sub>2e</sub> per year. With a life span of about 25 years, this would offset a total of 80 MTCO<sub>2e</sub>, yielding an average cost of **\$562.50/MTCO<sub>2e</sub>** (less if rebates are factored in).

Habitat Restoration – The Rutherford Dust Project cost approximately \$28,000/acre. Based on the US Environmental Protection Agency (EPA) figures, planting riparian woodlands offset a onetime gain of 329.50 MTCO<sub>2e</sub> and 1.6 MTCO<sub>2e</sub>/yr for 100 years. That provides a total off-set of 489.50 MTCO<sub>2e</sub> over 100 years, or **\$57.20/MTCO<sub>2e</sub>**, not including the land.

Staff is still researching the cost to plant and maintain trees (i.e. private revegetation projects), and the cost to protect developable vineyard land (land conservation).

Municipal Projects - The County analyzed the cost of installing solar systems on county owned buildings. The total cost was \$3,440,824 and it was estimated to generate 911,047 kilowatt hours per year. This translates to 459 MTCO<sub>2e</sub> per year, which yields a cost of **299.85/MTCO<sub>2e</sub>** (less if rebates are available). The City analyzed the cost to retrofit 279 streetlights with LED, which would cost \$216,850, saving 183,112 kilowatts per year with a lifespan of 10 years. That provides a total of 44 MTCO<sub>2e</sub> per year, or yielding a total cost of **498.24/MTCO<sub>2e</sub>**.

#### Voluntary Fee Mitigation Program: Likely Fee & Next Steps

Using just those costs included above, the average cost associated with one metric ton of GHG reductions in Napa County would be \$284.73. If you throw out the highest and lowest cost above, the average cost would be \$274.68MTCO<sub>2e</sub>, suggesting that the County *could not set its fee any higher than about \$275/MTCO<sub>2e</sub>*.

Just where to set the fee will be a political decision, and will also depend on how much additional data is collected and used in the calculation. It is quite common for agencies to establish impact fees somewhere below the precise nexus between the impact and the cost to mitigate. This is because it's

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<sup>2</sup> One kilowatt hour of energy conservation is equivalent to a GHG reduction of 0.52 lbs CO<sub>2e</sub>.

<sup>3</sup> A one kilowatt solar energy system yields an estimated 1600 kilowatt hours/year in Napa's climate.

often infeasible (politically and financially) to charge the whole amount and because additional funding sources are typically available to supplement the fees collected. For example, transportation impact fees collected in the Airport Industrial Area are used in conjunction with other local, State and federal transportation funding programs to address cumulative impacts at area intersections. Similarly, housing impact fees and the County's housing fund are seen as important "gap" financing for affordable housing development projects that use a wide variety of funding strategies.

In the current instance, staff believes that the voluntary in-lieu fees collected from project applicants following adoption of the CAP can be used as matching funds to facilitate emission reduction projects in Napa County. The amount of the fee will depend on how the program is structured. For example, if the fees are used in a 50/50 matching program, then the fee would be set at around \$137.34/MTCO<sub>2e</sub>. If the fees are used in a program that requires a 25% match, then the fee would be set at around \$206.25 /MTCO<sub>2e</sub>.

Staff is seeking input on the data and analysis contained in this memo, as well as the idea of establishing a matching fund for local GHG reduction projects. Preliminarily, staff is considering a recommendation to the Board of Supervisors that the Wildlife Commission -- which currently recommends funding qualified projects from Fish and Game fines -- be used to evaluate and recommend funding of deserving GHG reduction projects through an annual application process. Establishment of the program would require adoption of criteria for funding, procedures, and ways to monitor and ensure the program's effectiveness over time.