

Thursday, April 30, 2009 (file cac211)

To: Dan Breedon

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Subj: Current literature applicable to the general plan update

Ref A: Thomas Friedman, *Hot, Flat, and Crowded*, Why we need a green revolution and how it can renew America, Farrar, Straus & Girous 2008 (363.7)

Ref B: S. Milius, Trees fall faster as air heat up, Routine treedeaths in the West doubled over 50-year span, *Science News* Feb 14, 09 (condensed from Jan 23, 09 *Science*)

Ref C: R. Mahmood, K. Kerri, *Basic Small Water Systems*, Office of water programs Cal State Sacramento and California Department of public health 2008 (628.1162)

Ref D: R. Ewing, *Power with nature*, 2<sup>nd</sup> Ed., PixyJack Press 2006(696 P)

Ref E: C. Kettlewell, *Electric Dream*, Carroll & Graf Pub 2004 (629,2293)

Ref F: *Appalachia: History of the mountains*, PBS chan 9, 30 may 09, 10-11 PM

Comments:

1. Ref A follows themes developed in his earlier books but is more exhaustive and persuasive. He makes a strong case for a carbon tax and government stimulus of innovation associated with renewable energy. Time windows of opportunity are emphasized. Detailed energy analysis is shown, e.g. the electric energy recovery for hydro systems is about 1/3 and conventional petro-chemical passenger vehicles generate 1 lb of CO<sub>2</sub>/mile. An analogous problem that has local resonance is the statement that closed cycle biomass utilization creates a net zero carbon footprint. This is a complex process that needs to recognize potential inefficiencies.
2. Ref B describes adverse trends in forest health that may be attributed to direct or indirect effects of GHG. This observation suggests that plant carbon sequestration is being reduced in our present environment likely caused by global warming either directly or indirectly. This suggests that we may want to establish a forest measurement program in Butte County with a statistical uncertainty compatible with the general western states observations in Ref B.
3. Ref C directed toward training and testing of water treatment certification is a good overview of current thinking about all aspects of water depletion and contamination. Seasonal variation in water turnover in lakes due to stratification and algal blooms are examined. Submersible pumps are not discussed. This reference is primarily directed toward shallow depth agricultural or community users.
4. Ref D examines small scale renewable energy sources.
5. Ref E examines electric vehicle developments. On-the-fly charging using inductive techniques with spacing in accordance with mean slope may need to be examined as an economic

alternative to fixed charging stations. Limitations of charge rate for nickel and lithium based batteries with nanotechnology enhancements needs to be examined.

6. Ref F provides an historic overview of developments in Appalachia. This backdrop is likely to drive public opinion as TVA water storage options are examined locally. The chestnut blight is a good example of the care that is required as we consider major changes in local vegetation species. Typical examples might be the intrusive nature of switchgrass in the foothills within the right-of-way for UHV transmission lines and biodiversity required for healthy/fire-resistant forests.