

PUBLIC COMMENTOR 203 - DANIEL WICKHAM, SEPTEMBER 24, 1996

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My name is Dr. Daniel Wickham. I live in Occidental. I'm a professional ecologist with a Ph.D. from the University of California at Berkeley. I have a private company that is involved with wastewater treatment, and I hold a major patent for wastewater treatment technology, and have a couple patents pending in that, so I am informed on wastewater technology. I've circulated to each of you in the front a report that reviews the agricultural crop irrigation component of the EIR. In this report I show that the City currently is able to achieve zero discharge using conventional surface sprinkler irrigation of pasture for a major portion of the year|| This type of irrigation is only modestly effective and achieves its highest application rate only during the June, July, August dry period in the summer. That rate is 4200 gallons per acre per day. Now that's a number you should remember. The City is able to achieve zero discharge of its 20 million gallons per day at a rate of 4200 gallons per acre per day in the summer|| The weakness of the City's irrigation system is that this particular method and this particular crop are ineffective during the winter, when soils become saturated at the surface. Virtually no irrigation can occur for several months of the year using this particular technology. It is this single central flaw in the City's crop land irrigation system that is the only reason that the City has been forced to undertake this prolonged and expensive EIR process, yet surface sprinkler irrigation is just one of many irrigation methods. And grass is just one of many potential crops. |

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|| The overwhelming importance of the inability to irrigate in winter should have forced the consultants as their very first task to investigate every possible irrigation and crop alternative. Yet, there is little evidence in the EIR that they have done so|| In my report, I review documentation of a system that uses an innovative subsurface emitter that was specifically designed to promote tree root invasion but in such a way that it does not clog through the system. This particular system allows a utility to tap into the tremendous year-round thirst for water displayed by tree crops, especially our own native redwood tree. This technology was documented in the demonstration project over a 20-year period at the mountain view wastewater treatment plant in Martinez, California, which has a climate that's virtually identical to southern Sonoma County, or many other sites in Sonoma County. At this site, a transpiration forest was irrigated with secondary wastewater. There was no need for tertiary in this system. And it achieved rates of application that ranged from 70 percent to 600 percent higher than Santa Rosa's best application rate during the height of the summer with their current irrigation system. Most important is that the minimum application rate in the rainiest and coldest month of the year, namely February, was 7000 gallons per acre per day. In the peak of winter, this method of irrigation moved 67 percent more water than the 4200 gallons per acre per day rate achieved by Santa Rosa when they are at zero discharge.

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My report shows in great detail that this transpiration method of irrigation is superior to Santa Rosa's surface sprinkler system in every single important factor, including capital cost, operating cost, durability, environmental and public safety. But most significant is that the increase -- is the increase in the asset value of the Santa Rosa system. Redwoods

are one of the most productive plants on earth. They're also the most valuable plant crop that can be grown in northern California, at least legally. Every single acre planted and irrigated with Santa Rosa wastewater will increase in timber value at a minimum of \$167 each year. This is the only agricultural crop that is more valuable than planting houses on a piece of property. A forest the size just to intercept the overflow of the current system, such that the City of Santa Rosa can maintain its one percent discharge rate, would have to be somewhere around 100 to 200 acres in size. At five years, such a forest would begin to exceed that rate of uptake and very quickly no water would be available to put in the Russian River. Because unlike concrete treatment plants, trees grow. Trees are biological organisms. You do not need to expand a system that you build with trees because it expands on its own. At 60 years, a 100-acre forest would be worth one billion dollars. These are conservative numbers based on tree growth rate in an unirrigated forest, so this is a conservative estimate. That's 16.7 million dollars each year of added value to the Santa Rosa system. [In conclusion, my report shows that each of the six projects identified in the EIR fails by virtue of the incorrect core assumption that irrigation is infeasible in winter] I propose that the City plant redwood plantations. These would represent the missing project 7 that should be in this EIR. This project 7 should be immediately completed, because the City flushes millions of dollars of lost assets down the Russian River every year it delays. Thank you.]

Mayor Wright:

I understand your need and your want to support the speakers, and we want to hear what everyone has to say, and the continued applause will just elongate this process. Everything's being recorded and we're hearing it loud and clear.

So Robert Rawson, followed by Richard Charter, followed by Dick Shannon. Thanks.